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CONTRIBUTIONS

TO

THE SCIENCE OF EDUCATION

BY

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INTRODUCTION.

Of the three phases of educational study, the historical, the practical, and the scientific, it is the last which I propose to discuss in the papers composing this volume. The question of method is of very high importance, but the final test of method is doctrine. The history of education, or of the manifold attempts that have been made to solve the educational problem, is of supreme importance, but experiences and experiments can be interpreted and estimated only by the light of science. The question of educational doctrine is therefore fundamental.

It is a hopeful sign of progress in education that we are now fairly entering upon the discussion of principles and doctrines. Hitherto there has been a discussion of methods, often without a criterion, and even when a standard of values has been proposed, the final test has been success or failure; but reflection shows that the only absolute criterion is principle or law. And so we observe that in the press and in the convention there is a growing disposition to carry an appeal to the court of last resort, educational science.

Every author who records his serious convictions and the results of his deliberate thinking doubtless owes it to his

readers to forewarn them of the main ideas that inspire his efforts. Such a clew is the more necessary in a volume of detached essays like those which follow, and I bespeak the attention of the reader to the following statements, both as an aid to himself and as an act of courteous justice to me.

I am in nowise disposed to break with the past and to dream of an approaching revolution in educational theory and practice. A better future for the schools is doubtless foreordained, but this is to be a growth, slow and halting, like all higher forms of growth, and a growth out of past conditions and products. The institutions of a people, to be serviceable and helpful, cannot be far in advance of their actual condition; and if the dream of the educational utopist could be realized in form, it would be inoperative with men and things as they are. It is well that our previsions are only relative. We need to aspire in order that we may grow; but the roots of all true growth in civilization reach far back into the soil of the past.

Since the human mind has been studied by the acutest thinkers of all ages and countries, and since the wisest and the best of men have been working at the educational problem under all conceivable conditions, ethnic, social, civil, and religious, I find it impossible to believe that all this mighty effort must go for naught, and that educational science must be constructed *de novo*. That the main data for the establishment of a rational art of educating are now to be found in the current systems of philosophy and psychology seems to me the most probable of infer-

ences; and that there really exist a sufficient number of such data to lay the foundations of a science of education seems to me the most palpable of truths. For these reasons may we not think that the present duty of the educational thinker is to select and collate data already established, and to draw from them the rules for practice? It is within this field that I have attempted to work, and in the discussions that follow I have tried to do scarcely more than to illustrate and enforce what appear to be well-established and fundamental truths.

Perhaps the term *tacking* will best describe the current mode of educational progress; in his recoil from what seems to be a serious error in schoolroom practice, the reformer catches hold of some neglected truth, concentrates his whole soul on his new discovery, denounces the whole existing order of things as irretrievably bad, and by his declamation incites the unthinking and the malcontent to a revolution in methods. Finally the grain of wheat is winnowed from the bushel of chaff, and the pendulum of opinion swings back towards the abandoned truth. In the absence of well-settled principles these epidemics will always be imminent; but with even a few fundamental doctrines distinctly recognized, it would be possible to make progress in an orderly and rational manner. Any mode of reform that feels obliged to appeal to popular prejudice rather than to the reflective reason is open to suspicion and distrust. Nearly every one of the so-called "basic principles" bears the ear-mark of some infatuation. Each of them expresses the half of a truth, but with such distortion and exaggeration as to be a vir-

tual untruth. It is a safe rule to suspect every aphorism that proceeds from the mouth of an over-ardent reformer.

Methodical teaching, even if it be mechanical, is much superior to aimless teaching; and so there was an undeniable gain when exact method was made an essential part of a teacher's professional preparation. But we incur a grave danger when we impose on a teacher a specific rule of action divorced from the principle that is its justification. Contrasted with a principle, a rule is undiscriminating, narrowing, unfruitful; and it must be confessed that systematic training in method has a tendency to rob the teacher of his freedom, his versatility, and his personal power. Method has an incomparable value when it directs capitalized energy, wisdom, and culture; but method is taught at some sacrifice of scholarship and culture when it accompanies a teacher's instruction in subjects and is made a characteristic element in his course of study.

Freedom and power must come from a much higher source. Teaching is a purely spiritual art, and the higher manifestations of this power are as dependent on inspiration as poetry, eloquence, and art are. I have seen teaching that was artistic in the same sense that music and painting are artistic. The sources of such power doubtless lie in large measure in a happy constitution of soul that is quite independent of school training; in innate benevolence and sympathy and quick intuitions; but there are also the added elements of wide scholarship, accurate mental training, and professional knowledge of the scientific type, as distinguished from the formal rules of

method. In writing these papers I have had in mind such teaching as I have just tried to indicate. Perhaps, under existing conditions, the most of the work done in the schoolroom must be mechanical in order to utilize slender teaching ability; but this only makes apparent the supreme need of encouraging those who purpose to teach to covet the best gifts.

The practice of medicine and law is attractive to men of talent because there is so wide a field for the exercise of their versatility and skill. The succession of new and interesting problems awakens and sustains a noble passion for triumphing over difficulties, which gives keen enjoyment to professional life. These victories and delights are due to the previsions of science; the delicious sense of power comes from fruitful knowledge. But perhaps even a keener enjoyment comes from the consciousness of growth, and of taking progressive steps in an honorable career.

All these avenues to enjoyment are open to the teacher provided he has professional competence and skill—provided he has that kind of knowledge which can give him power over the remote and the difficult—provided he has that versatility and freedom which come from the comprehension of general truths. To the teacher who has gained a real insight into educational principles there is presented a field for the exercise of his highest intellectual gifts, for there is a constant succession of varied and interesting problems which hourly challenge his professional skill. And he may enjoy that grateful sense of growth to which allusion has been made, and he may be

inspired by the hope of an honorable career. All these things are possible, provided the teacher has formed a love for thinking and has made himself capable of scientific prevision.

If I interpret my own thoughts aright, my dominant purpose in the composition of these essays has been to encourage among teachers the habit of serious reflection upon some of the greater problems in education, to the end that they may find a new delight in an occupation otherwise monotonous and uninspiring. The first need of the teacher is to be reasonably happy in his work, and I feel sure that the source of this happiness is in the direction I have tried to indicate. I wish I might gain the ear of young men who are ambitious to rise in the world through the doing of good. To those who can treat grave questions with judicial seriousness and fairness there is no field of activity more inviting than that of the educational thinker.

Need I remind the reader that the questions discussed in these essays are "open questions"? On no one of them has the last word been said; and any one whose thinking has been patient, catholic, and candid has the right to be heard. The most thoughtful and fruitful book on education since the "Émile" is undoubtedly Spencer's "Education," and by common consent it is the most authoritative expression of the doctrine that is now in the ascendant among educational reformers. It may be doubted whether any thinker since Aristotle has been endowed with such powers of analysis and comprehension as are conspicuous in Mr. Spencer's philosophical writings;

but this vast power of generalizing is the source of error whenever, as in Mr. Spencer's case, studies are not "bounded in by experience." Indeed, this is a very conspicuous case in which "studies do give forth directions too much at large." It is a notable fact that the men who, like Rousseau, Locke, and Spencer, have written the most absolutely on education have been men of little or no experience in actual teaching. I trust the reader will not think it presumption, then, that I have ventured to call in question some of Mr. Spencer's broadest generalizations. For many years I have been compelled to study educational questions on their purely practical side, and the attempt to convert Mr. Spencer's formulas into working rules first suggested to me the probability that this love for generalizations had betrayed him into error.

In bringing these essays together into a volume I have tried to cancel repetitions that almost involuntarily appear in such a series of detached papers; but after all my care some such repetitions of thought, expression, and illustration remain to tax the indulgence of the reader.

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"Know and then act."—Bias.

"Studies perfect nature and are perfected by experience."—Bacon.

"Progress is not a force that acts spasmodically, but is a logical and graduated evolution in which the idea of to-day is connected with that of yesterday, as the latter is to a still more remote past."—Joseph Simon.

"It may perhaps seem to be better, and indeed necessary to the salvation of truth, to subvert the opinions even of our friends. For both being our friends (Plato and truth), it is holy to give the preference to truth."—Aristotle.

SCIENCE OF EDUCATION.

CHAPTER I.

IS THERE A SCIENCE OF PEDAGOGICS?

This question is ambiguous, the two queries involved in it being, (1) Is there a science of pedagogics *in posse?* Or, (2) Is there such a science *in esse?* I shall attempt to answer these queries in the order stated.

I. Is there, from the very constitution of things, a science of human training as distinguished from the art of human training?

1. Presumptively there is; for the established use of the terms *science of education*, *science of pedagogics*, and *science of teaching*, by the leading thinkers of the age, almost necessarily carries with it the implication that the art of human training has its correlated science. At least, the current use of this term by men addicted to habits of exact thinking establishes a very strong probability that such a science exists *potentially*, if not *actually*.

2. The existence of such a science *in posse* is established beyond question by the doctrine of two orders of knowledge, a higher and a lower, each of which is the complement of the other.

These two orders of knowledge may be called the *speculative* and the *practical;* the *speculative* resulting

from the examination of the established constitution or nature of things, and held by the mind as matter for simple contemplation; and the *practical* resulting from the production of effects by the use of means. For example, the attentive examination of a new substance may end in the discovery of certain properties or sets of uniformities in relation or behavior; and as long as this knowledge remains in the mind as matter for mere contemplation, and is not employed in the way of producing results, it is *speculative.* But when the knowledge of these uniformities is employed for direction in the working out of results, it becomes *practical.* The knowledge of astronomy is chiefly of the speculative order; man has but little opportunity to employ the observed uniformities in the production of results. The knowledge of agriculture, on the other hand, is chiefly practical, consisting in mere methods for the attainment of results. The baker's knowledge of his own art is practical; he can perform all its processes, but can explain none of them. On the other hand, the chemist's knowledge of the baker's art is speculative; he can explain all its processes, but can perform none of them. These contrasted phases of knowledge are universal; and, by general consent, the terms science and art have been used to mark this discrimination. Every art thus implies a science; and, in turn, every science implies an art, actual or possible.

A summary answer to the first query is this: By universal consent there is an art of pedagogics, said art consisting in certain processes for the attainment of results. But these processes necessarily imply certain uniformities, and these uniformities, when ascertained and put in order, constitute a science of pedagogics.

II. Is there a science of pedagogics *in esse?*

The answer to this question depends somewhat on the definition of science. If science be an orderly and exhaustive deduction of minor truths from a few first principles that are axiomatic, then there is but one science—mathematics; but if the term science be construed in the sense explained above, the number of possible sciences is indeterminate, and the number of actual sciences very large. This conception of science does not require that the enumeration of its first principles shall be complete, or that they be arranged in a strictly logical order, or that the series of deductions shall be complete. Sciences may be incomplete in matter and imperfect in form, and still be sciences in the accepted and legitimate use of this term.

The science of pedagogics stands in the case last described; it is still incomplete in its matter, all its first principles not having been formulated; and it is imperfect in form, its admitted principles not having been arranged, and deductions from them not having been made with the required completeness and order. Whoever takes an established psychological law and draws from it legitimate deductions that can be employed for guidance in educational work, has made a contribution to the science of pedagogics; and works like Bain's "Education as a Science," and Rosenkranz's "Pedagogics as a System," that discuss, in a comprehensive way, the doctrines of education, are actual treatises on the science of pedagogics.

The answer to the second query, then, briefly stated, is this: A science of pedagogics exists as an actual fact, but it is still incomplete in matter and imperfect in form. The need of the hour is a systematic rearrangement of the old material, and the addition of omitted principles and their deductions.

Though not strictly belonging to the above inquiry, I add a paragraph on the general nature of educational science from my own point of view.

The material composing a science of pedagogics is logically distributed as follows:

1. The being to be educated is susceptible of three orders of growth: first, physical; second, mental; third, moral. A rational art of education must be based on the laws that regulate these three orders of growth. The science of pedagogics must therefore borrow principles from physiology, psychology, and ethics.

2. All instruction presupposes a medium of communication. This medium is language; and the laws of language, as employed in the communication of knowledge, are expounded in the science of logic. The science of pedagogics will therefore borrow other principles from logic.

3. Growth presupposes aliment; and this aliment, in the present case, is represented by the various subjects of human knowledge. A necessary element in the science of pedagogics is a determination of education values; but, as there is no independent science for determining these values, this is an inductive inquiry, falling within the domain of the science of pedagogics itself.

4. In passing from the single child to aggregates of children, there arises the need of the organization of schools and school-systems; and so the science of pedagogics must borrow other material from history, sociology, political science, and legislation.

5. It must be that much valid educational truth is embodied in current methods. The analytical examination of results is therefore a necessary part of the science of

pedagogics; and the truths thus elicited will serve to verify the deductions drawn from assumed principles.

6. Education, in its ideal or formal aspect, aims at the realization of the typical man, and comprises all the agencies that can be brought under human control for the attainment of this end. The principles that are involved in this whole complex process, when systematically arranged, constitute the science of pedagogics. This I believe to be the authorized use of the term by German, French, and Italian writers on education.

7. The term pedagogy should be used to designate the *art* of education, or, rather, so much of this art as falls within the province of the school. This distinction is made by the Italian educator, E. Latino,* and seems to me worthy of being accepted by educational writers.

8. The current use of the term pedagogics (*Fr.* pédagogie; *It.* pedagogica, pedagogia; *Ger.* pädagogik) in French, Italian, and German literature, is a sufficient warrant for the respectability of the term. To affect a dislike for the word on etymological or historical grounds is childish.†

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* "Thus pedagogics (*pedagogica*), or the science of education, is connected with pedagogy (*pedagogia*), or the art of education; for science has need of art in order to be useful to life, and to direct the conduct of human affairs; and art has need of science in order to be enlightened and made conscious of its own scope and power." —Emanuele Latino, "Della Pedagogica" (Palermo, 1876), p. 114.

† "Pedagogy is the science of education. The word pedagogue is of Greek origin, and signifies a conductor of children. A pedagogue was a slave charged with the duty of conducting children to school. From this wholly material sense the word has been raised to a nobler sense. To-day a pedagogue is he who directs the young intellectually and morally. Can there be a grander mission?"—Marion, "Leçons de Psychologie Appliquée à l'Éducation" (Paris, 1884), p. 13.

In his "Histoire de la Pédagogie," M. Compayré takes pains to distinguish the term *pedagogy* from the term *education*, using the former in a limited or technical sense, and the latter in a comprehensive or liberal sense.*

* See the Introduction to Compayré's "History of Pedagogy" (Boston, 1886).

CHAPTER II.

THE SCIENCE OF EDUCATION. — ITS NATURE, ITS METHOD, AND SOME OF ITS PROBLEMS.

One of the curiosities of current educational history is the fact that English teachers are still discussing the question, *whether there is a science of education.* The cause of this phenomenon is said to be the low state of philosophical studies among the English. This conjecture is confirmed by the fact that in Germany and in Scotland, where philosophy has long been in high repute, this question is as far above discussion as an axiom in mathematics. It is probable that, in this country, philosophical culture has not yet attained a depth and a breadth that will make the existence of a science of education a postulate. It is much more probable that when this subject has become of sufficient importance to be talked about, there will be sceptics and disbelievers here, as in England. On this subject, our present intellectual state is the unanimity of the ignorant. There are yet to come the disagreements of the inquiring, to be followed, let us hope, by the unanimity of the wise.*

In human societies there are advanced stages of opinion that seem to come in the fulness of time. That is, they do not seem to come as the results of deliberate thinking, but rather to be evolved out of unconscious or spontaneous thought. In this state, these intellectual advances are *growths;* and, as such, they escape special

* Spencer, "Education" (New York, 1861), p. 101.

notice on their first appearance, but by and by they become the subject of critical analysis, and in the end they are helped forward by deliberate effort. As examples of this law we may observe the three progressive phases of public opinion as to fitness for teaching:

1. The primitive phase of opinion identifies teaching ability with general scholarship. It is assumed that a good scholar will be a good teacher, if he chooses to adopt this vocation. This mode of thought is still embodied in the legal requirements for obtaining a license to teach. The current modes of examining teachers are apparently based on the assumption that mere scholarship is the test of a candidate's fitness and worth.

2. Within the last one hundred years there have been the outcroppings of an advanced opinion. After centuries of experience, the fact had become impressed on some minds that something besides scholarship was needed for success in teaching. This something turned out to be trained skill. To be a teacher, one must know not only the subjects he is to teach, but as well the best ways by which these subjects are to be taught. This discovery is, by implication, at least twenty-two centuries old. The world had to wait for the genius of Socrates to formulate this general truth: *That whatever a man proposes to do, that thing he should learn before the doing is attempted.* This incident from the "Memorabilia of Socrates," by Xenophon, is worthy of repetition: Euthydemus, surnamed the Handsome, was an ambitious and conceited young man of Athens. He aspired to take part in the government of the city; and, to create the impression that he was wise above the young men of his time, he had made a large collection of books, and on these he relied as an evidence that he was qualified to become a ruler of Athens,

and to give counsel on public affairs. Now Socrates thought it his duty to take the conceit out of this superficial and ambitious young man. An opportunity was soon found; for he surprised Euthydemus in a company of admiring friends, in a bridle-maker's shop near the Agora—a place to which the young man was accustomed to resort when his political prospects were to be looked after. This is what Socrates said: "I imagine that Euthydemus here has already framed an exordium for his public oration * * * and that when he begins to speak he will make his opening thus: 'I, O men of Athens, have never learned anything from any person, nor, though I have heard of some that were skilled in speaking and acting, have I sought to converse with them, nor have I been anxious that any one of the learned should become my master; but I have done the exact contrary; for I have constantly avoided not only learning anything from any one, but even the appearance of learning anything; nevertheless I will offer you such advice as may occur to me without premeditation.'" Thereupon Socrates proceeds to parody this supposed speech as follows: "I, O men of Athens, have never learned the medical art from any one, nor have been desirous that any physician should be my instructor; for I have constantly been on my guard, not only against learning anything of the art from any one, but even against appearing to have learned anything; nevertheless confer on me this medical appointment; for I will endeavor to learn by making experiments upon you." "At this mode of opening a speech," Xenophon slyly observes, "all who were present burst out into laughter."*

I was led into this digression by remarking that the

* "Memorabilia of Socrates" (Watson's translation, New York, 1869), IX., ii., 3–5.

doctrine is ancient, that men should learn their art before they venture to practise it. Euthydemus held the very modern doctrine, that "we learn to do by doing;" and had he been an applicant for a position in a public school, he would doubtless have urged his claims in this wise: "I, O members of the board, have never learned the art of teaching from any one, nor have I been desirous that any teacher should be my instructor; for I have constantly been on my guard, not only against learning anything of the art of teaching from any one, but even against appearing to have learned anything; nevertheless confer on me this scholastic appointment; for I will endeavor to learn by making experiments on your children."

I think it a curious fact that this Socratic doctrine, so fruitful in its suggestions, did not affect the teacher's calling from this time forward. But the fact remains, that it was not till within about a hundred years that a knowledge of method began to be regarded as an essential element in a teacher's qualification. This second phase of opinion respecting fitness for teaching is embodied in the Normal School, whose original intent was to give a sound academic training in subjects, and at the same time to communicate the best-known methods of doing school work.

3. But the slow evolution of opinion has brought forward a still higher ideal of fitness for teaching. According to this conception, the teacher should not only have a broad knowledge of subjects, supplemented by a knowledge of the best methods, but should know the general principles and laws that underlie methods, and thus give them their validity. In this progress of opinion, the sequence has been this: (1) knowledge; (2) knowledge and method; (3) knowledge, method, and doctrine. Or the successive steps may be stated in another form, as

follows: At first, the teacher was not differentiated from the scholar, there was no preparatory training; next, the teacher was differentiated from the scholar by method, the preparatory training was empirical; now, this preparatory training is to be *rational*,—method must be the outgrowth of known physiological, psychological, and ethical laws; the ideal teacher must be a *man of science* in the same sense that the reputable physician is a man of science; teaching is no longer to be a trade, a mere calling, or an empirical art, but a rational art, an art deriving its inspiration from science, and basing its practice on established laws. All this amounts to saying that, in the slow but sure evolution of human opinion, a science of education is beginning to emerge from the art of education: and so the purpose of this chapter is to define, in outline, the nature of this new science, the method of its cultivation, and some of the problems that it must solve.

Throughout this chapter I use the term *science* as distinguished from *art*, science denoting a higher order of knowledge, and art, a correlated, but lower order, of knowledge. To make my use of these contrasted terms as clear as possible, I discriminate two orders of knowledge as follows: We may suppose a farmer to know the mere processes or rules of his art, but to be in absolute ignorance of the physical and chemical laws that are involved in the art; he can *do*, but cannot *explain* what he does. On the other hand, we may suppose a scholar to know all the physical and chemical laws that are involved in agriculture, but to be absolutely unable to succeed in a single branch of this art. He can *explain* all its processes, but can perform none of them. In the first case, there is *art* without *science;* and in the second, *science* without *art.* This contrast runs through all forms

of human labor. There is no art that does not imply a science, for there is no effect without a cause.* There may be sciences, however, without correlative arts, because there may be laws that human skill has not employed.

The contrast now pointed out has been expressed as follows: "Science consists in *knowing*, art in *doing;*" "the principles which art involves, science evolves." The contrast is broadly expressed by the terms *theory* and *practice*, as the theory and practice of teaching. Some of the relations of science to art, or of theory to practice, are the following: 1. The ideal knowledge comprehends both *doing* and *knowing*—it is *theory* embodied in *practice*, or *practice* guided and inspired by *theory*. 2. The largest element in *trades* is *practical* knowledge; the largest element in *professions* is *theoretical* knowledge. 3. The lower order of knowledge is the easier of attainment; it will, therefore, be the more common, and hence the cheaper; the labor of highest market value will be that which involves the largest use of the intelligence. 4. The direct route to the perfecting of an art is through a clear comprehension of the principles that are involved in the art.†

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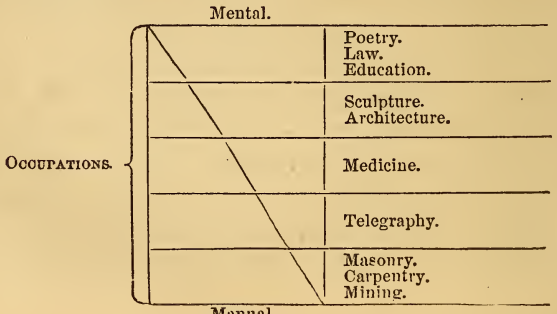
*Plato speaks of the *art and science of making shoes*. "Theætetus," 147.

† Perhaps a simple diagram like the following may add clearness to this distinction:



What is meant by educational science must be apparent—the doctrines, principles, or laws that are involved in the art of education. This art has been practised from time immemorial, but whatever progress has been made in it has, for the most part, been *instinctive*, *slow*, and *wasteful*. It is now proposed "to take stock of our progress," to discover the principles that underlie the processes of human perfectibility, and to bring educational methods into conformity with law, thus making our progress *rational*, *continuous*, and *economical*.

This third movement in educational thought, which we may call the rational or the scientific, is attested by (1) the fact, that in Germany, in Scotland, and even in our own country, education, in its three aspects, as an art, a science, and a history, has been made a subject of university instruction; (2) by the fact that books on the scientific aspect of education are beginning to be written and read; (3) and also by the fact that normal schools have begun to superadd to their instruction in subjects and methods instruction in principles and doctrines.

This movement towards making education a rational art has been a genesis or an evolution; it has not been forced into notice by resolutions and popular demonstrations, but has been, the rather, instinctive and spontaneous. It has come in the fulness of time, and it has come as a permanent factor in educational history.

The new thought will insist on its right of domicile, and we must gradually adjust ourselves to the changes that are imminent and inevitable. The newspaper, the reaper, the sewing-machine, and the telephone are instances of a similar evolution. They are *births* rather than *inventions*. Civilization is a progress, and these elements in our progress may possibly be superseded by

something of a higher type; but it is not conceivable that the world will go back to the state of things that preceded these inventions. The particular truth I wish to emphasize is this: a new day has dawned on the educating art; henceforth teaching is to be allied with philosophy, and to furnish a field for the exercise of the highest gifts of mind and heart. Henceforth the teacher may be inspired to his highest efforts by the hope of a *career;* he may see in his profession an opportunity to rise in public consideration by the exercise of his ability, his versatility, or his genius. And, infinitely better than all this, the succeeding generations of men will attain a higher type of manhood, because from their training will gradually be eliminated the elements of ignorance, empiricism, and waste.

The general nature of educational science may be gathered from the following statements: Among every people, and in every age of the world, there has been a conception of what a human being ought to be; and, in every case, the purpose of education has been to cause the young to grow into this ideal. This conception has varied from age to age, and from place to place; but, in every case, the purpose has been to mould the rising generation into the likeness of some ideal. Animal cunning, physical endurance, and a contempt for suffering, were the elements of the Indian's conception of the perfect man; and so the Indian boy was trained into habits involving these qualities. The Jewish conception was reverence, piety, and passive obedience to authority; Jewish instruction was, therefore, religious and literary, making the law of Moses and sacred history the chief studies of the schools. The ideal Athenian was cultured and æsthetic; the ideal Roman, patriotic, brave, and

practical; and, in each case, education was directed to the attainment of these ideals. In our own time, education is moulded after two conceptions or two ideals. First, there is the conception of the typical man, or of man as the most perfect specimen of his kind, without regard to any special use that is to be made of him; and to turn out this finished product is the purpose of what we call a liberal education. Again, there is the conception of man as a creature who must "get on in the world," or earn a livelihood by being serviceable to his fellows; and so, to turn out this product, we institute what we call technical or practical education. We may now define liberal education as the complex process by which a human being is helped to grow into the highest ideal of his kind; and technical or practical education as the process by which a human being is to be fitted to earn a livelihood by some form of industry. The science of education must start with these two conceptions, and, having made an analysis of them, must formulate methods for attaining the ends in view.

These two conceptions, the higher and the lower, have three elements in common: (1) There is the *substratum*, or body; (2) the mind, as the seat of *intellectual* activities; and (3) the spirit, as the seat of *moral* activities. In other words, man, the most perfect specimen of his kind, and man, as an instrument or toiler, have passed through three forms of training—physical, intellectual, and moral. If this complex process of education is to be *rational*, physical training must be based on the laws of physiology; mental training, on the laws of psychology; and moral training, on the laws of ethics. In other words, the basis of the science of education must be general laws derived or borrowed from the sciences of physiology, psychology and ethics.

Again, education, both liberal and technical, will be modified according to the genius of the people for whom and by whom it is administered. Thus, English education differs from German, German from French, French from American—each from every other. The science of education must provide for these variations, and so it must borrow some of its principles from sociology, general or special.

The medium of communication between teacher and pupil is language; all instruction involves the use of symbols; speech is the instrument of the teacher's art. It follows, then, that that part of education which has to do with the communication of knowledge must be based on principles of logic.

Thus far education is an applied or a derived science. That is, it assumes the principles or laws that have already been established in other departments of thought, and upon these it bases its modes of procedure. But, besides this borrowed material, the science of education must employ general truths of its own gathering. For example, each of the studies upon which the pupil's mind is employed serves a distinct purpose. As Bacon has it: "Histories make men wise; poets, witty; the mathematics, subtile; natural philosophy, deepe; morale, grave; logick and rhetorick, able to contend. . . . So every defect of the mind may have special receit."* Now, the doctrine of education values is of the first importance in education; but, as there is no independent science for determining these values, this becomes a function of educational science. Other independent investigations falling within the province of this science are the follow-

* "Of Studies."

ing: the action of examinations; education as affected by sex; modes of organization; the supervision of schools; the training and examination of teachers; school economics; and, in general, the testing and formulating of results. So much as to the general nature of educational science.

If the foregoing outline has been correctly drawn, it is not difficult to state the general method of this science. By far the larger and more important part of this science is derivative, consisting of general laws borrowed from physiology, psychology, ethics, sociology, and logic. In the use of this material, the process must therefore be deductive. Deduction is, then, the general method of investigation in educational science. Assuming the truth of a given psychological principle, the effort must be to exhibit its application in the practice of teaching. In other words, within the compass now under consideration, methods must be the direct deductions from principles.

Now, leaving out of account the principles borrowed from other sciences, and directing our attention to the investigations falling within the field of educational science itself, we see that the initial process in several cases must be inductive. Take, for example, the influence of sex on education. Here the most direct method is the analytical examination of results. If accurate statistics have been kept in the case of mixed schools, the influence of sex upon scholarship, attendance, etc., if any, will be readily detected. So far, the process is inductive; but when these inductions have been merged in a law, this law is deductively applied, as in the first case. But, throughout the entire science, there is the need of this analytical examination of results, both for the purpose of

testing deduced methods, and as the means of confirming general laws. For a law may be true, while deductions drawn from it may be false. In respect of method, therefore, the case may be stated in this way: the greater part of the material composing the science of education is borrowed from other sciences; and these first principles, thus taken on trust, must be applied to use by the deductive method. There are other principles, however, that the science of education must find, and the method of this finding must be inductive; but when actually found, these laws, like those that are borrowed, must be applied deductively. But a concurrent factor throughout the whole science must be the verification of laws and their applications by the analytical study of results; and this verification is an inductive process.

In opposition to this view, the opinion is held by some that educational science, at least so far as it has to do with children, must be constructed *de novo*, by the inductive method. It is asserted that we know comparatively nothing of infant psychology, and that it must be left to mothers, infant-teachers, and nurses to lay the foundations of an educational psychology, by a patient registration of the phenomena of infant life. To this assumption it may be replied that we do know much about the psychology of children, because we know much about psychology in general. It would seem as reasonable to assert that as yet we know nothing about infant physiology—digestion, for example. But the fact is, that there is neither infant physiology nor adult physiology, but simply physiology in general. The bodily functions preserve their continuity through infancy, childhood, and maturity, and whatever differences there may be are differences in *degree* but not in kind. If the stomach

performs its functions at all, its mode of digesting is the same for infant and for adult. So the mind preserves its continuity from one extreme of life to the other; in its normal state, its general modes of activity are the same for the child as for the man. There is but one psychology, as there is but one physiology.

I am very far from denying that there are differences between a child's mind and a man's mind; but I insist that these are differences in *degree* or *power*, and not in constitution. It is freely admitted that these differences in power should be observed and heeded, and that mothers and nurses may do some real service by their registration of the phenomena of infant life. What I protest against is the present tendency to exaggerate these differences, and to assume that the child's education must be considered quite apart, as though he were a being *sui generis*. I venture to express the belief that one of the most serious errors in primary teaching arises from an exaggerated notion of the differences between child mind and mature mind. Some observed difference furnishes the devoted enthusiast with a clew, and then this clew is followed up so persistently, and so far, that one section of the child's mind is aroused to preternatural activity, while another section lies unused and torpid. It is observed, for example, that the sense activities predominate in childhood. The teacher lays hold of this clew, and there is such a persistent and copious feeding of the senses that the physical section of the child's mind becomes abnormally active, and the intellectual section as abnormally inactive. It would seem to me a great gain if there were to be a return towards the older conception, that the child and the man are essentially one, and that, for infancy, childhood, and youth, there should be considerable sameness in instruction.

From the time of Socrates to the present day, the acutest intellects of the race have been employed in the study of mental phenomena; and it is inconceivable that from all this wealth of effort we inherit no first truths upon which we may safely base a science of mental training. Most assuredly we have such truths; and the first task of the educational philosopher, as it seems to me, is to select certain great psychological laws, and then to apply them deductively to the processes of mental culture. I feel sure that careful deductions from three well-established laws,* would rationalize nearly every process of the school-room. Instead of sighing for new lands to discover, the wiser part is at least to survey the patrimony already ours.

So much for the general method of the science itself. Let me next make a brief mention of two general principles that should be observed while making our contributions to educational science:

1. *Whatever policy has received the long sanction of the wise and good, is likely to have some elements of truth in it.*†

One of Rousseau's counsels was: "Take the road directly opposite to that which is in use, and you will almost always do right." It was Pestalozzi's boast: "I have turned the European car of progress quite round, and set it going in a new direction." The educational reformer is too prone to find that every part of the existing order of things is wrong. Indeed, must he not think

* 1. The descent of the mind from aggregates to elements.
2. The mutual exclusion of thought and feeling.
3. Progress from the confused to the definite.

† For a discussion of this principle see Spencer, "First Principles," ch. I.

this in order to be a reformer? If everything were not in a very bad way, his vocation would be gone. This state of mind is not due to perversity, but to blindness. To be a reformer one must have intense feeling; but intense feeling excludes clear thinking. Fervor and logic are mutual exclusives.*

On *a priori* as well as on *a posteriori* grounds, we may be sure that in Pestalozzi's time the European car of progress was not going in a direction entirely wrong, for it is inconceivable that a civilization into which the best men of their times had put their wisest thoughts could be wholly at variance with truth; and in the fact that Pestalozzi made no marked change in the direction of European civilization, we have a second proof that the original movement was, in the main, right.

The principle above quoted teaches a decent respect for the old, and cautions us against the panaceas that will be invented from time to time by ardent reformers.

2. Another precautionary truth is the following: "*The suppression of every error is commonly followed by a temporary ascendency of the contrary one.*" † This law accounts for many phenomena in the history of educational thought. One phase of a complex truth, pushed to an extreme, finally ends in a recoil to the other phase

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* "In general, narrowness of view is one of the conditions of vigor in action. If one has a wide intelligence and considers the *pros* and *cons*, reasons press forward, multiply, and mutually destroy one another; those who are given to meditation are naturally inactive. They are 'spectators rather than doers,' as Descartes said of himself. On the other hand, the more exact and definite one's views are, the more energy he displays in action."—Marion, *op. cit.*, p. 39.

† Spencer, "Education," p. 102.

of the truth. The over-use of memory, in the olden schools, has been succeeded by its disuse in the new; and so we have gone from much grammar to no grammar; from instruction in the abstract to instruction in the concrete; from much classics and little science, to little classics and much science; from books without pictures, to books with very little except pictures; from unlimited text-book instruction to unlimited oral instruction; from discipline by ferule to discipline by coaxing.

The two principles just stated are needed in order to give steadiness and judicial fairness to our investigations. Is wholesale condemnation decreed against some time-honored subject or method? Before joining in the noise of the crusade, let us recollect that in all probability there is something to be said in favor of the outcast.

Is some new all-in-all put forward with much-voiced fervor, as a sure specific for the ills of the schools? We may not only discount the merits of the last favorite at a heavy rate, but we may be sure that not far off is some discarded truth in need of our protection. If one hitherto unacquainted with educational affairs were to hear for the first time the extravagant claims set up in favor of oral instruction, he might reasonably make three inferences: (1) That there had been some misuse of text-book instruction; (2) that the discarded system had a considerable element of truth in it; and (3) that oral instruction is not worth nearly all that is said of it. In order to make sure and steady progress in educational science, the one indispensable condition is "that we henceforth be no more children, tossed to and fro, and carried about with every wind of doctrine, by the sleight of men, and cunning craftiness." *

* Ephesians iv., 14.

These two truths point unmistakably to a conservative frame of mind. Such, I believe, should be the attitude of the educational philosopher. He should mediate between the past and the future, and his highest achievement will be, with the least noise, to evolve the new out of the old, a better future out of a good past. He will be neither retrogressive nor stationary; he will be a progressive conservative. His motto will be *nihil per saltum.* He will not desire revolution, but evolution. It is Emerson who says to the radical: "The past has baked your loaf, and in the strength of its bread you would break up the oven." The ideal position, could we ever find it, is somewhat in advance of the timid conservative and somewhat in the rear of the ardent radical. However it may be in other matters, I feel sure that whoever becomes a careful student of the history and the philosophy of education will soon come to occupy this middle ground; for history is retrospective and science prospective; and the mind that is subject to their double influence is the resultant of two opposing forces.

I now come to the final part of my task, which is to state some of the more important problems that await a solution by educational science. In stating these problems I shall doubtless, through inadvertence or purpose, indicate a probable solution; and in this way there may be seeming dogmatism, but it is only seeming. I would abridge no one's liberty to form and express his own sincere conclusions; and some serious thinking on these problems is my excuse for indicating the line of my conclusions. As they seem to me, these are some of the questions that demand an early solution:

1. In what relation does professional, technical, or practical education stand to liberal education? What is

the ideal sequence? Is this sequence disturbed by the exigencies of life, such as limited time or the need of engaging in productive labor? Should liberal education and professional education be carried on simultaneously? The solution of this general problem will affect such questions as the following: (1) The introduction of manual training into the public schools; (2) The education given in agricultural schools; (3) Academic instruction and professional instruction in normal schools.

2. Somewhat analogous to the preceding problem, but depending on different principles for its solution, is this: Should mental labor and manual labor be closely conjoined. Is there not an organic antagonism that involves a failure in one or both when pursued simultaneously.* If it is decided that this conjunction is unwise, as a general rule, there is still the question whether it may not be necessary in certain cases, as in schools for dependent children. In all problems of this sort, the ideal adjustment must be distinguished from an adjustment required by exigencies; and whenever two solutions, a general and a special, are permitted, the special cases should be defined with all possible exactness.

3. What is the nature of what is termed culture, and what are the conditions essential for attaining it? Are these its characteristic marks: On the moral side, kindness, sympathy, sincerity, tact; and on the mental, wide discrimination, quick perceptions, and an extensive knowl-

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* "It is impossible for the mind and body both to labor at the same time, as each labor is productive of contrary evils; the labor of the body preventing the progress of the mind, and the mind of the body."—Aristotle, "Politics" (Walford's translation, London, 1881), book viii., chap. iv.

edge of what is of the most universal human interest? * Is the study of the purely *material* conducive to culture? Or must culture, on the mental side, come mainly from the contemplation and study of the supersensuous, *i. e.*, the mental, the moral, and the divine?

The solution of this problem will affect the function of the sciences and of the humanities in the higher education. If the answer shall be found to lie in the direction I have indicated, a higher value must be given to geography, history, language, literature, mental and moral science. Here will be found one criterion for determining the education value of studies.

4. What is the meaning of the word "practical," in such expressions as "practical education," "practical studies"? Is it the correlative of "theoretical," implying the outward manifestation of inward power? If the term merely means the quality of self-preservation, what degree of practical value have the natural sciences to the ordinary student? For *individual*, and not *professional*, use, what degree of practical value has physiology to the physician, chemistry to the chemist, or natural philosophy to the machinist? The purpose of these questions is to point out two sources of misapprehension, (1) the ambiguity of the term "practical," and (2) the assumption, not warranted by evidence, that the so-called "practical subjects" have a primary bearing on individual needs. The secondary, or professional, value of physiological knowledge is incalculable; while its primary or individual value is comparatively small. It is only when we give a larger content to the term that physiology and kindred subjects can claim a high educational value.

5. In the body of this chapter I have mentioned the de-

* See Plato's conception of the cultured man, p. 288.

termination of education values as an important aim of educational science. With such values even approximately determined, the rationalizing of the teaching art would at once begin. The thought of making such determinations is a very old one. Plato attempts such an inquiry in his "Republic," and recommends, among other things, that arithmetic should be made a compulsory study, on account of its great disciplinary value; and Aristotle devotes the greater part of the eighth book of his "Politics" to a discussion of the education value of music. Lord Bacon gives a summary statement in his essay "On Studies;" and Dr. Whewell discusses, at considerable length, the values of mathematics, the classics, and the sciences. Still, the whole subject needs to be investigated anew, with all the lights and helps that our better opportunities supply. This inquiry belongs to the inductive branch of educational science, and will be discussed in a subsequent chapter.

6. The third term whose meaning should be rigorously determined is the word "nature" in its personified use, as in the cant of educational literature, "the order of nature," "nature's method," "follow nature." Next to the flippant use of the phrase "new education," there is nothing more indicative of the low state of thinking among us than the reckless use of this term "nature." What contempt would be heaped on a modern scientist who should explain a phenomenon by saying that "Nature abhors a vacuum!" But Joseph Payne's "Nature teaches her children by object lessons," is just as indefensible. If we must still use these phrases, let us know the exact connotation of the word "nature." *

7. What is the relation of clear knowing to right do-

* For a fuller discussion of this term see Chapter VII.

ing? Socrates identified knowledge with virtue, holding that if a man did wrong it was because he was ignorant. The Jews held nearly the same doctrine, and the moral instruction in the mediæval schools was based on the same assumption. This has been the current belief wherever education has been administered by the Church, but with the secularization of education has come the opinion that there is no essential connection between knowledge and morality. Probably there is error at both extremes, the truth being that knowledge is helpful to morality. State patronage of education is based on the old notion of the moral quality in instruction. Whether this is a fiction or not is well worth the finding out.

8. An inquiry into the mental condition of savages will show that, concurrent with the acutest sense-training, there is intellectual ineptness amounting almost to stupidity. This conjunction raises the query whether the modern doctrine as to the effect of sense-training on intelligence is well founded. The fact just cited at least permits a reasonable doubt on this point. The question involves the formal objective teaching of the time, and even the kindergarten. It is well to recollect that ancient teaching was almost purely subjective, and that the greater educational reformers, Ratich, Comenius, and Pestalozzi, employed objective instruction chiefly to teach the meaning of words. A modern instance of this subjective mode of instruction may be seen in the "Record" of Mr. Alcott's school, by Miss Peabody.

There is psychological ground for thinking that the savage exhibits the normal effect of an over-training of the senses; for "knowledge and feeling,* though always co-existent, are always in the inverse ratio of each other."

* Hamilton, "Metaphysics" (Boston, 1868), p. 336.

9. The latest criterion for judging of the quality of teaching is the amount of pleasure-giving that it furnishes. While no one questions that good teaching will inspire a general air of happiness, there are very many who insist that work is not always pleasure-giving, but that even such work must be done in every good school. This is a psychological problem of no great difficulty, and its solution would set at rest a disputed question of great importance. It will probably be found that a study may be disagreeable because it involves a mode of mental activity that has never been developed, or that has fallen into disuse; and so the study may serve a far better purpose than one that accords with the free working of a well-developed power. The distribution of mental aliment follows the same law as the distribution of physical aliment; the more vigorous faculty or organ will take the lion's share, while the weaker faculty or organ will be left to starve. We know that this is a law even of the spiritual life: "For he that hath, to him shall be given; and he that hath not, from him shall be taken even that which he hath."

10. But perhaps the largest problem of all is this: To what extent is it true that education should be a process of rediscovery, the pupil being placed as nearly as possible in the tracks of the first of his race? Mr. Spencer has formulated the principle as follows: "The education of the child must accord, both in mode and arrangement, with the education of mankind as considered historically; or, in other words, the genesis of knowledge in the individual must follow the same course as the genesis of knowledge in the race." The earliest appearance of this doctrine is in the Introduction to Condillac's "Grammaire," where it is stated and discussed with great

fulness. Condillac attempted to follow this historical method in the education of the Duke of Parma; but, in order to make it work successfully, he was obliged to give his pupil a preliminary course of instruction in mental and moral science! I believe this seductive generalization to be the largest assumption yet made in the line of educational thinking. The so-called "Pestalozzian Principles" are but the corollaries to this theorem that has never been demonstrated. If we are permitted to think that the dictum of Condillac and Spencer may not be final, here is a most inviting and profitable field for study.*

11. The last question that I venture to call attention to is this: How are books instrumental in gaining knowledge? Is the transmission of knowledge possible, or must each man gain knowledge by the independent activity of his own mind? When a wise man dies, does his wisdom go with him, as we have recently been informed?† To state this general question in a concrete form: What is the action of the mind when we read in the almanac that "there will be a total eclipse of the sun May 6th, 1883, visible in the Southern Pacific Ocean"? In order that this statement may be converted into knowledge, must the simple reader turn astronomer, and by personal investigation verify the prediction? If the domain of knowledge is to be limited to what we actually verify by our own experience, it is high time that we be undeceived. Is it or is it not true that we know our own names?

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* This question is discussed at length in Chapter V.

† John W. Dickinson, "Oral Teaching: its Proper Limits and Methods." A Prize Essay (Boston, 1880), p. 17.

The agency of language, or the mode in which we acquire our second-hand knowledge, is not easy to explain; but the difficulty is not insuperable, and, when overcome, we shall be protected from such absurdities as the ones I have indicated. That such loose thinking is possible is of itself a sufficient justification for this appeal in behalf of educational science.

In the chapters that follow I shall discuss at greater length some of the questions that have here been stated in outline.

CHAPTER III.

CONTRIBUTIONS TO THE SCIENCE OF EDUCATION VALUES.

The conception that knowledge is mental food, and that study is a mental gymnastic, is a very ancient one. The fact of mental and moral growth was as clear to David * as it was to Pestalozzi. In the "Republic," Plato discusses the value of music, gymnastics, arithmetic, poetry, geometry, astronomy, and dialectic (logic) as means of mental discipline; and, in the "Politics," Aristotle takes up the same line of inquiry, and leaves us an unequalled dissertation on the educational claims of music. In Greek thought there was not only the conception that knowledge is aliment, but, above all, that the effort of the mind to master its knowledge is the main condition of growth. The soul was not so much to be furnished with instruments for use as to be beautified, ennobled, and perfected, as itself the contemplated *ego*. The Greek philosopher did not conceive of knowledge as a utility, but rather as the means by which the soul could rise to the contemplation of the true, the beautiful, and the good.

The disciplinary, not the practical, value of knowledge was uppermost in Greek thought.†

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* Psalm i.

† "Therefore, Glaucon, it will be proper to enforce the study [of arithmetic] by legislative enactment, and to persuade those who are destined to take part in the weightiest affairs of state to study

Coming down to later times, we find Lord Bacon discussing the education values of studies. His conception seems to be that study is a medicine or a remedy, rather than a food. Thus he says: "There is no stond or impediment in the wit, but may be wrought out by fit studies; like as diseases of the body may have appropriate exercises."* Here, too, knowledge is rated chiefly for its disciplinary value. The infirmities of the mind are weaknesses, and hence are to be cured by development through exercise. For example, if the power of discriminating is weak, it is to be raised by exercise—the pupil must engage in hair-splitting with the schoolmen.

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calculation and devote themselves to it, not like amateurs, but perseveringly, until, by the aid of pure reason, they have attained to the contemplation of the nature of numbers; not cultivating it with a view to buying and selling, as merchants or shopkeepers, but for purposes of war, and to facilitate the conversion of the soul itself from the changeable to the true and the real"—"Republic," 525.

* The whole of this quotation is too instructive to be omitted: "*Histories* make men Wise; *Poets* Witty; the *Mathematicks* Subtill; *Naturall Philosophy* deepe; *Morall* Grave; *Logick* and *Rhetorick* Able to Contend. *Abeunt studia in Mores.* Nay, there is no Stond or Impediment in the Wit, but may be wrought out by Fit *Studies.* Like as Diseases of the Body may have Appropriate Exercises. Bowling is good for the Stone and Reines; Shooting for the Lungs and Breast; Gentle Walking for the Stomacke; Riding for the Head; And the like. So if a Man's Wit be Wandering, let him *Study* the *Mathematicks;* for, in Demonstrations, if his Wit be called away never so little, he must begin again. If his Wit be not Apt to distinguish or find differences, let him *Study* the *School-men;* For they are *Cymini sectores.* If he be not Apt to beat over Matters, and to call up one Thing, to Prove and Illustrate another, let him *Study* the *Lawyers Cases.* So every Defect of the Minde may have a Speciall Receit."—Bacon, "Of Studies."

Neither the Greek philosophers nor Lord Bacon attempted any classification of subjects as a means of estimating and marking their education values. Whatever scientific prevision their discussion has, is qualitative and not quantitative, and qualitative in only the most general sense of the term. Music and gymnastic must be studied as mutual correctives, the tendency of music alone being to make the soul soft and yielding, and that of gymnastic alone being to make it hard and rigid; "or if a man's wit (attention) be wandering, let him study the mathematics."

In his "Cambridge Education" (London, 1850), Dr. Whewell attempts a somewhat elaborate treatment of the subject in a quasi-scientific way. He sets up a classification of subjects as a means of determining the relative values of the classics and the mathematics on the one hand, and of the sciences and the modern languages on the other. He distributes studies into two classes, the permanent and the progressive. "To the former class belong those portions of knowledge which have long taken their permanent shape—ancient languages, with their literature, and long-established demonstrated sciences. To the latter class belong the results of the mental activity of our own times—the literature of our own age, and the sciences in which men are making progress from day to day. The former class of subjects connects us with the past, the latter with the present and the future" (pp. 5, 6). From this classification Dr. Whewell draws two inferences: 1. That, as the learner must become conscious both of a past and of a present humanity, he should study both classes of subjects. 2. That, as a knowledge of the past is a necessary condition for understanding the present and forecasting the future, the

permanent studies should form the earlier and major part of one's liberal education. Dr. Whewell's treatment of the question has scarcely a greater degree of prevision than Plato's or Bacon's.

The classification seems to have been invented to serve a special purpose; but, granting that it serves this purpose well (which admits of doubt), the limit of its usefulness is reached. It reminds us of Aristotle's classification of men as the naturally strong and the naturally weak, as the basis of his argument in favor of human slavery.*

In 1835 Dr. Whewell published his celebrated pamphlet, entitled "Thoughts on the Study of Mathematics as a Part of a Liberal Education," and this provoked from Sir William Hamilton one of the most vigorous pieces of educational polemics that has ever appeared. Dr. Whewell put forward the claims of mathematics as an invaluable factor in a liberal education, and contrasted this study somewhat unfavorably with logic. Sir William Hamilton felt challenged to defend philosophy against what he regarded as the unjust pretensions of mathematics, and to this controversy we owe the most brilliant contribution ever made to the science of education values. The character of the criticism as a whole may be quite fairly estimated from this quotation: "From this general contrast it will easily be seen how an excessive study of the mathematical sciences not only does not prepare but absolutely *incapacitates the mind* for those intellectual energies which life and philosophy require. We are thus disqualified for *observation, either internal or external*, for *abstraction and generalization*, and for *common rea-*

* "Politics," book i., ch. vi.

soning; nay, disposed to the alternative of blind *credulity* or of irrational *scepticism.*" *

While the impartial reader cannot fail to admire the cleverness and vigor of this masterly critique, he will also be sensible that the conclusions are somewhat partisan and biassed. For us, this discussion of the education value of mathematics has the obvious disadvantage of being negative rather than positive. For the purpose of this inquiry we need to know the plus values of mathematics; though we must allow that it is a substantial gain to know what the study cannot do.

The next notable attempt at the fixing of education values is that of Mr. Herbert Spencer, in his essay entitled, "What Knowledge is of most Worth?" The very elaborate way in which Mr. Spencer sets about answering this question is one of the seductive features of this much-lauded essay. "There *must* be some striking and valid outcome of a discussion that is heralded with such imposing formalities," the reader thinks, and so he listens reverently and obediently to the deliverances of the oracle. This is a characteristic part of the prelude: "If there needs any further evidence of the rude, undeveloped character of our education, we have it in the fact that the comparative worths of the different kinds of knowledge have been as yet scarcely even discussed—much less discussed in a methodic way, with definite results. Not only is it that no standard of relative values has been agreed upon, but the existence of any such standard has not been conceived in any clear manner. And not only is it that the existence of any such stand-

* "Discussions on Philosophy and Literature" (New York, 1868), p. 275.

ard has not been clearly conceived, but the need for it seems to have been scarcely felt." *

"In education, then, this is the question of questions, which it is high time we discussed in some methodic way. The first in importance, though last to be considered, is the problem how to decide among the conflicting claims of various subjects on our attention. Before there can be a rational *curriculum*, we must settle which things it most concerns us to know; or, to use a word of Bacon's, now unfortunately obsolete, we must determine the relative values of knowledges." †

I make these quotations to illustrate a way Mr. Spencer has of capturing his reader's approval by means of a cunning *pièce de resistance*, and also because they are statements of fact that require our discriminating attention. This writer's argument will be more conveniently discussed further on. It suffices here to say that he carries the reader to the irresistible and triumphant conclusion that the knowledge that is of the most worth is SCIENCE; and that by SCIENCE Mr. Spencer means all the branches of human knowledge save literature and history. ‡ It must be confessed that this is very far from the result we were promised—"a determination of the relative values of knowledges." It is very like this conclusion of an elaborate inquiry into the relative dietetical

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* "Education," pp. 26, 27. † Ibid., p. 29.

‡ In this essay Mr. Spencer gives no formal definition of science, but his conception of it is to be gathered *passim*. The nearest approach to a definition is the following: "To the slowly growing acquaintance with the uniform coexistences and sequences of phenomena — to the establishment of invariable laws, we owe our emancipation from the grossest superstitions."—"Education," p. 95.

values of different foods—"they are all *very valuable* save two." Evidently what we need to know is not merely that the sciences *en masse* have a supreme value, but what special purpose is served by each of the sciences; whether physiology, for example, is to be esteemed chiefly for its practical value, or for its disciplinary value; whether its practical value is of the primary or of the secondary order—that is, whether each person must have this knowledge, or whether he may avail himself of it at second hand, as when he employs a physician in case of need; and finally, whether the acquirement of this knowledge affects some special mode or modes of mental activity, or whether it raises the whole tone of the mental organism. I make this statement to show that Mr. Spencer's conclusion is as indiscriminating and unscientific as Dr. Whewell's. I think it will appear in the sequel that it has neither the scientific accuracy nor the fruitful prevision of Plato's implied distinction. In educational polemics, Mr. Spencer's effort may be regarded as an offset to Dr. Whewell's.

Mr. Bain devotes the fifth chapter of his "Education as a Science" to the discussion of education values, and the same subject is pursued, in an informal way, in subsequent portions of his work. These discussions are characterized by largeness of view, catholicity of spirit, and eminent judicial fairness. The critical reader cannot fail to be impressed with the conviction that his author has emancipated himself from prejudice, and is in the zealous pursuit of truth for truth's sake. In the main, Mr. Bain's discussion of education values is the application of common-sense to the solution of this complex problem. He marks the distinction between studies that end in useful information and studies that end in disci-

pline, and holds that the practical sciences contribute but little to mental training. Mr. Bain is wholly occupied with the qualitative education values of subjects; he discusses the *kind* of effect produced by science and language, but does not discuss the degree in which allied subjects affect the mind, or the degree in which the so-called practical subjects serve for guidance. The largeness of the author's thought seems to forbid precision of statement, and this indefiniteness often leaves the reader in an unpleasant state of suspense. Even with these qualifications, Mr. Bain's treatment of this theme has a large, substantial value, and is, doubtless, the ablest contribution that has been made to the discussion of this historic problem. So far as I know, we are indebted to this writer for the term "education values." At least, it is from him that I have borrowed it.

The last contribution to the discussion of education values that I shall notice is that made by Mr. Latham in his work "On the Action of Examinations."* He ob-

* The bearing of the science of education values on the practice of education is well exhibited in the following quotation: "I believe that mental physiology will one day be recognized practically in education. The time may come when certain peculiarities of mind may be recognized as 'indicating,' or 'counter-indicating,' in medical phraseology, the use of certain kinds of mental exertion. A science of observation may be prescribed in one case, some study which enforces concentration of attention in another, while one which involves 'introspection' may be strictly prohibited in a third. We may even have hereafter a medical branch of the educational profession; we may have persons who shall make it their business to understand mental constitutions, and to advise parents as to the course to be followed with youths of peculiar or slightly morbid turns of mind. I am aware that what I hint at would afford a tempting field for quackery, but, at the same time, I feel sure that

serves: "There are studies which aim at endowing the student with a power which he can be called on to put in practice, and others which store and cultivate the mind, but convey no new power that can be exercised" (p. 86). We then have *art* subjects, such as mathematics, language, and grammar; and *knowledge* subjects, such as history, geography, and literature. The first kind of knowledge may end in *doing*, the second ends in merely *knowing*. An examination in subjects of the first kind permits us to discover whether real assimilation has taken place, whether mental power has been gained; while an examination in subjects of the second order is at best a test of memory. This is a distinction that would readily occur to the mind of a professional examiner like Mr. Latham. By an examination in geometry he can test a boy's power to do; while there is nothing in history or geography that can be used to test the pupil's constructive ability. While this distinction is obvious, it is superficial, for it assumes that culture and power belong to different categories. Mr. Latham misses a distinction which I shall hereafter attempt to make plain—that between the specific effect of a study, and its tonic, constitutional, or culture effect. The specific effect of a subject like arithmetic is obvious, because it is concentrated; while the tonic effect of a subject like history is obscure, because it is diffused. The element of power is present in both cases. In the first it is focused on one point, and so can be tested and recorded—it is palpable, so to speak. In the second this power is evenly diffused, and appears

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immense good might be effected by a wise practitioner who should unite a sound knowledge of mental physiology with a practical acquaintance with the work of education" (pp. 327, 328).

only on those occasions which involve the whole man. A specific subject will give a pupil the obvious power to measure a triangle or to construct a sentence. A tonic or culture subject will endow the learner with belief, opinion, common-sense,* and make him a man of good judgment. The practical outcome of Mr. Latham's distinction is to give an undeserved value to such subjects as arithmetic and grammar, and to belittle the value of such subjects as geography and history. A feeling that this conclusion is a false one has led me to make some distinctions already foreshadowed, but which I shall now attempt to render more explicit.

In educational science a subject will have as many values as it has distinctive uses, and each of these values will be measured by the quantity and the quality of the effect that it produces. The broadest distinction in uses is the one suggested in the quotation from Plato given in a preceding note. Plato dwells chiefly on the reflex effect of the study of number, as it "facilitates the conversion of the soul itself from the changeable to the true and the real;" or, as he says in another place, "as it mightily draws the soul upwards, and compels it to reason about abstract numbers." In the very same connection he speaks of the objective effect of this knowledge—it may be used for purposes of war, but not, as by merchants or shopkeepers, for purposes of trade. Here are two uses that are absolutely distinct. The study of arithmetic is chiefly valuable, as Plato says, for the wonderful effect it produces on the thinking instrument, the conscious self; but it has another use, as itself

* I employ this term in the sense in which it is discussed by Dr. Carpenter in his "Mental Physiology" (New York, 1875), ch. x.

an instrument which may be employed in war or in trade. This is a distinction which is founded in the very constitution of things, and may be illustrated as follows: the mere swinging of an axe has a reflex effect on the muscles involved in the act; but, in addition to this, there may be an objective effect absolutely distinct and different, as in the cutting or cleaving of wood. In all such cases there *must* be the reflex effect, and there *may* be the outward or objective effect. The learning of a subject involves the mind in some mode or modes of activity; and this exercise is one of the essential conditions of development or growth. A subject that calls into exercise a large number of activities, or that brings a single activity into vigorous use, has a high value of a certain kind. But, quite independently of this reflex effect, a mental acquisition may itself become an instrument for effecting objective results. In the case cited from Plato, arithmetical knowledge may be used in military art or in the traffic of merchants. By common usage, the terms *disciplinary* and *practical* are employed to designate the two values that have been illustrated. A subject is said to be valuable either for *discipline* or for *use*. Some subjects are allowed to have a high practical value, and, at the same time, a low disciplinary value; and *vice versa*. I do not insist on this distinction because it is new, but rather because it is old and true. I believe it to be the only valid general distinction that has been or can be made.

At this point I will return to Mr. Spencer's discussion of "the relative values of knowledges," for the purpose of making inquiry into the truth of one of his assumptions. One preliminary is stated as follows: "Acquirement of every kind has two values—value as *knowledge*

and value as *discipline.* Besides its use for guidance in conduct, the acquisition of each order of facts has also its use as mental exercise; and its effects as a preparative for complete living have to be considered under both these heads."* The candor of this statement encourages the reader to anticipate a luminous and equally candid discussion of one of the main elements of the great problem; and but for the seductions of Mr. Spencer's style of writing there could hardly fail to be some degree of surprise and disappointment at the treatment the question finally receives: "This division of our subject," he says, "we are obliged to treat with comparative brevity; and, happily, no very lengthy treatment of it is needed. Having found what is best for the one end, we have, by implication, found what is best for the other. We may be quite sure that the acquirement of those classes of facts which are most useful for regulating conduct involves a mental exercise best fitted for strengthening the faculties. It would be utterly contrary to the beautiful economy of Nature, if one kind of culture were needed for the gaining of information, and another kind were needed as a mental gymnastic."† Then, by way of illustration, we are told of the Red Indian who acquires swiftness and agility "by the actual pursuit of animals;" of the Bushman whose eye acquires "a quite telescopic range" by "being habitually employed in identifying distant objects;" and, finally, of the accountant, "whose daily practice enables him to add up several columns of figures simultaneously."

Let us now devote our serious attention to Mr. Spencer's argument, to his illustrations, and to his general

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* "Education," p. 37. † Ibid., p. 84.

conclusion. What we have called, by courtesy, the argument runs as follows: "The education of most value for guidance must at the same time be the education of most value for discipline;" for to suppose otherwise "would be utterly contrary to the beautiful economy of Nature." The whole school of educational writers of which Mr. Spencer is the representative are accustomed to resort to the myth "Nature," whenever their favorite theses cannot be supported by legitimate argument. The existing order of things is personified under the term "Nature," and then this "Nature" is assumed to be a sort of goddess who administers all the affairs of terrestrial existence with incomparable accuracy and wisdom; and then the validity of any assumption is established by showing that it conforms to a so-called "Order of Nature." In the case under consideration the authority of "Nature" is quoted as a sufficient ground for a very large assumption—"the beautiful economy of Nature" constrains us to believe that studies that are most valuable for use are also the most valuable for discipline.

Naville, in his "Logique de l'Hypothèse," finely ridicules the easy resort to authority as follows: "Aristotle teaches that the sun is incorruptible. At the time when the discovery of spots on the sun began to circulate, a student called the attention of his old professor to the matter, and received the following reply: 'My friend, I have read Aristotle twice from beginning to end, and I know there can be no spots on the sun. Wipe your lenses better. If the spots are not in your telescope, they must be in your eyes!'" Is it any more absurd to quote the dictum of Aristotle in questions of physical science than an assumed "Order of Nature" in questions of educa-

tional science? It may fairly be counted a standing wonder that a philosopher of this day still adheres to a mode of philosophizing that has long since been abandoned by all reputable scientists. It is only in educational science that the mediæval logic is still in full force.

"The beautiful economy of Nature!" that were finely said by a satirist. To succeed in raising one plant from the sowing of a thousand seeds; to choke the growth of a wholesome plant by a wilderness of noxious weeds; to abandon a crop of promising fruit to a horde of ravenous bugs; to carry off a score of robust children by infection from insidious disease-germs—such is "the beautiful economy of Nature!" *

Now a few words as to the Red Indian, the Bushman, and the accountant. Whatever proof there is in these illustrations is evidently of this sort: for his guidance, the Indian needs agility and swiftness, and these endowments are best secured by the actual pursuit of animals; what the Bushman needs for his guidance is telescopic vision, and this is best acquired by obeying the needs of his daily life; the accountant needs the ability of rapid computation, and the stress of his daily life forces this ability upon him. When generalized, the thought takes

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* "Nature is so rich, and produces beings in such profusion, that she is condemned to destroy ninety-nine out of every hundred of them. There would not be standing-room, air, or food for a millionth part of the creatures she produces, if she were not limited by necessity. Thus, a herring produces such a quantity of eggs that, if all came to maturity, within a few generations all other species of fish would be in danger from them. . . . But only one egg in several thousand comes to maturity; yet this is is enough to multiply the species in abundance. The other eggs are destroyed in countless numbers."—Marion, *op. cit.*, p. 81.

this form: the stress of one's environment begets the very power that is needed to support the conditions of that environment. This takes us to the central thought of the new philosophy. Cosmic forces, acting blindly, but with the certainty and persistence of fate, in the fulness of time evolved the solar system, one member of which is the earth. In the further progress of time, the blind play of physical forces evolved the various forms of animal and vegetable life. One of the products of this process is the fish. This creature has its predetermined environment or habitat. This habitat not only conditions the life of the fish, but entails a continuous struggle for existence; and this struggle, in turn, begets the power to continue existence. In other words, this creature is exactly adapted to its environment, and its environment, in turn, is as exactly adapted to it. For the fish to transcend its environment would be to die, or to become something other than a fish. Man, too, is the product of *his* environment, and his struggle to maintain existence begets the power needed to react against the forces that would destroy life. Man lives to eat, and eats to live. His needs are co-ordinate with his immediate resources.

Mr. Spencer's theory of education values is in perfect accord with his philosophy. The Red Indian, for example, was evolved out of certain fixed conditions, and, if he is to remain a Red Indian (as by the new philosophy he ought), he must in no respect transcend his environment. He must support existence in the spot where fate planted him, and just the guidance he needs for this purpose is best gained in his predetermined struggle for existence. Any greater power would be useless, and any new endowment would unfit him for the place to

which "Nature" had assigned him. All the walks of life furnish illustrations of Mr. Spencer's meaning. Each man is predetermined to follow some craft; and the endowment he needs for this purpose is best acquired by devoting himself to the duties of his craft. For example, the comfort of the tailor requires him to be bow-legged, and the practice of his art tends to make him bow-legged. Under this conception, it must be granted that "the education of most value for guidance must, at the same time, be the education of most value for discipline."

But there is a different conception of human destiny, and this involves a different theory of education values. The principal elements in this other conception are as follows: (1) Man is not the passive victim of his environment, but has such power of modification and control as either to transcend that environment or virtually to re-create it. (2) Man is a member of the human race, rather than of a caste, and he is predetermined to an upward growth towards the highest type of his kind. (3) Education is not fate, but is a process of growth, modified, controlled, and perfected by human art. (4) The main purpose of education is to permit the individual to participate in the conscious life of the race.

On these grounds we object to Mr. Spencer's treatment of the Red Indian, the Bushman, and the accountant. The first need of the Indian and the Bushman in particular, is to become men; and for this purpose there should be considerably less activity in the lines of swiftness, agility, and telescopic vision; and considerably more in the lines of ploughing, building, and thinking. Abilities not given by "Nature" should be created by human art. This "Nature" should not dominate over man, but should

be subjugated by man. Even the accountant deserves better treatment than Mr. Spencer prescribes for him. He should aspire to something better than "to add up several columns of figures simultaneously." He is a man by better right than he is a machine, and, as such, he may even learn to philosophize; but, for this purpose, he has need of a discipline quite different from that which will merely furnish him with the guidance required by an accountant. When we consider the requirements of a liberal education, or that course of training which will raise a human being from the bondage of "Nature" up towards the typical man, it is not true that the practical value of a study is identical with its disciplinary value. On the contrary, it is much nearer the truth to assert that these two values are in an inverse ratio to each other, or that a subject that is most valuable for maintaining the struggle for existence is least valuable for purposes of human culture. It is well known that in business houses, interest, discount, etc., are computed from printed tables, with no reference whatever to arithmetical rules, and still less to mathematical principles. The daily life of such an accountant requires him to be expert in the use of an interest table, and Mr. Spencer would say that the hourly use of such a table will give this operative the very discipline he needs. Now, if we allow that one purpose of school-life is to perfect the mind as the instrument of thinking, what kind of teaching will be best for this end—a training in the mere use of an interest table, instruction in the application of rules, or instruction in mathematical principles? Is it not evident that if we regard the pupil as a human being, and not merely as an operative, the training that is incomparably the best will come from the study of prin-

ciples, and that only a discipline of the lowest order will result from instruction in the use of the table? And is it not quite as evident that the knowledge of most immediate *practical* value to this accountant is of the very least *disciplinary* value to him as a man? I say again, that if we put the Red Indian, the Bushman, and the accountant in the same category, and conceive that each is doomed by "Nature" to his respective habitat, we must grant the identity of the practical and the disciplinary values of subjects; but if we conceive that our pupils should become men before they are converted into operatives, and that while they are operatives they still remain men, we must hold that the value of knowledge for mere guidance is one thing, and the value of knowledge for mental discipline is quite another thing. Indeed, it cannot have escaped the notice of any observing teacher that the acquirement of the knowledge most needed to sustain the struggle for existence is almost valueless for purposes of mental discipline. In support of this view I quote from writers whose opinions are entitled to great weight:

"The reasoning that I oppose," says Renan, "starts from a low and false assumption—that instruction serves only for the practical use that is made of it; for example, that he who, by his social position, does not make use of his intellectual culture has no need of that culture. Literature, from this point of view, is useful only to the man of letters; science only to the *savant;* good manners and fine bearing only to men of the world. The poor man should be ignorant, for education and knowledge are useless to him. Blasphemy, gentlemen! The culture of the mind and the culture of the soul are duties for every man. They are not

simply ornaments, they are things as sacred as religion." *

"If we wish to cultivate the mind to the extent of its capacity," says Dugald Stewart, "we must not rest satisfied with the employment which its faculties receive from our particular situation in life. It is not in the awkward and professional form of the mechanic, who has strengthened particular muscles of his body by the habits of his trade, that we are to look for the perfection of our animal nature; neither is it among men of confined pursuits, whether speculative or active, that we are to expect to find the human mind in its highest state of cultivation. A variety of exercises is necessary to preserve the animal frame in vigor and beauty; and a variety of those occupations which literature and science afford, added to a promiscuous intercourse with the world, in the habits of conversation and business, is no less necessary for the improvement of the understanding." †

"All the usages of the language," says Alexander Bain, "including the highest rules of correctness and propriety, may be imparted merely as guidance in speaking and writing with exactness; there being no attempt to cast them into methodical shape or to reduce them under rational explanations. This would be pure information; the teaching of language, so conducted, would be very useful, but would not be called a mental discipline. Those persons that all their life have been associated with only such as speak correctly and elegantly, become correct and good speakers without any training at all. A foreign language might be imparted in the same

* "La Famille et l'État dans l'Éducation" (Paris, 1869), p. 3.

† "The Philosophy of the Human Mind" (London, 1856), p. 12.

way; even dead languages could be taught without grammar rules; that is to say, by mere habituation in reading books." *

So far as I am able to discern the truth, the main facts in the case under discussion may be summarized as follows:

1. Educational science must have first and chief reference to the pupil as a member of the human race, and living under the law of ascent towards the type of his kind; and a subordinate reference to the pupil as an individual destined to move in a fixed habitat.

2. The type of education should be humane or liberal, rather than professional or technical.

3. The type of instruction should be disciplinary, rather than practical.

4. In the acquirement of disciplinary knowledge, the mind must work under high tension; a much lower tension suffices for the acquisition of useful knowledge. Even in this domain, action and reaction are equal.

5. Mr. Spencer's assumption that the knowledge that is best for guidance is also best for discipline is false. On the contrary, the immediate practical value of a subject and its disciplinary value are usually in an inverse ratio to each other.

Thus far my purpose has been to show that the broadest and most characteristic distinction in education values is that which is expressed by the terms Practical and Disciplinary; and that these values are not only not the same, but that they are usually in the inverse ratio to each other. I shall now attempt to show that the practical value of a subject is either direct (immediate) or indirect (mediate).

* "Education as a Science" (New York, 1879), p. 136.

If a miller were asked why he rents a seat in a railway train instead of owning the railway and the train, his reply would doubtless be that it is cheaper to rent than to own. This is the proximate but not ultimate explanation of this and analogous facts. If he were asked why he buys a suit of ready-made clothing, instead of raising the sheep, carding and spinning the wool, weaving the fabric and making the garments with his own hands, he would doubtless say that he has neither the time nor the skill requisite for this series of processes; that human power is so limited and human needs so various that he must buy what he cannot produce. If this miller were versed in political economy, he would say that the ultimate fact in the case is the law of division of labor. It is by reason of this law that, in the supply of most of our wants, it is cheaper and more convenient for us to rent or buy than to own or make. I now wish to make plain the fact that, in the matter of useful knowledge, the law of the division of labor operates in precisely the same way, or that there is some knowledge of daily use for guidance that we must have as a personal possession; but that there is other knowledge that we need only on occasions, and that we cannot afford to acquire, but which we can hire. In case of illness, the lawyer employs a physician; and, in case of an invasion of his rights, the physician employs the lawyer. Why has not each acquired, as a personal possession, that peculiar (professional) knowledge possessed by the other? Evidently because it is cheaper and safer to hire this knowledge than to own it; and this cheapness and safety are due to the division of labor. The educational principle that is involved in these illustrations may be stated as follows: Each human being needs for his daily guidance as a

toiler, a citizen, and a man, certain kinds of knowledge, and this knowledge he should acquire as a personal possession; but there is other knowledge which he needs for use or guidance only on occasion; this knowledge he need not own, provided he can more conveniently hire it.

This principle may now be more articulately illustrated as follows: For his daily guidance, the miller must know definite things relating to his trade; he must also know his rights and duties as a citizen; and as a man, or member of the race, he must know something of history, geography, literature, and science, and so must know how to read. All this knowledge he must possess, and the practical value of this knowledge to the miller is of the direct order. On occasions, however, as in illness, in trouble, in preparing for a journey, or in emergency of any sort, he needs other knowledge that he can avail himself of indirectly, or that he can readily find in books. This is practical knowledge of the indirect order.

To show the bearings of this distinction on educational science, I will return for a moment to Mr. Spencer's discussion of "the relative values of knowledges." His method of procedure is "to classify, in the order of their importance, the leading kinds of activity which constitute human life," and then to determine, in each case, the kind of knowledge that is needed to support these five classes of activities. It would be easy to criticise this classification as to its sequence; and the classification itself, though elaborated with such philosophic pretence, seems to have but very little bearing on the foregone conclusion. But we will accept, provisionally, Mr. Spencer's triumphant answer (*Science*) to his main question,

"What knowledge is of most worth?" and endeavor to show in what way his theory would affect educational practice. Admitting the inestimable value of physiological knowledge to the human race, does it follow that every one should make a study of this science as a means of guidance? The answer is to be found in the fact that only the simplest rudiments of this subject, scarcely more than its empirical precepts, come within the range of the average pupil's opportunities; but that the real science has been monopolized for professional use by physicians. The fact in the case is that, with the exception of the parts directly connected with hygiene, physiological knowledge is as little available for individual guidance as astronomical knowledge. Under normal and usual conditions, the human body is a machine that will perform its functions without the need of assistance; and under abnormal conditions, nothing but the highest knowledge and skill can be trusted in the way of intervention. Daily experience shows that in this domain nothing is more dangerous than half knowledge, or "a little knowledge." Every man, for his own daily guidance, should know the plain conditions of healthy living, with respect to food, air, exercise, etc., and this easy knowledge should be communicated to all; but when a man is sick, or bruised, or wounded, he should employ a physician—he should hire the knowledge and skill that his own preoccupations and predilections have forbidden him to acquire. In the first case, physiology has a practical value of the direct order; in the second case, it is of indirect or mediate practical value. The case just presented is a typical one. For example, all men have need of hats; shall all men, therefore, learn the hatter's trade? By no means. It suffices that each man knows enough

of hats to judge of their quality when he buys, and to take proper care of the one he chances to own. Any knowledge beyond this must be relegated to the craft of hatters.

While on this special subject, I am tempted to indulge in a quotation to show how an austere philosopher may mistake a pretty bit of sentiment for argument: "When a mother," says Mr. Spencer, "is mourning over a first-born that has sunk under the sequelæ of scarlet-fever—when, perhaps, a candid medical man has confirmed her suspicions that her child would have recovered had not its system been enfeebled by over-study—when she is prostrate under the pangs of combined grief and remorse, it is but a small consolation that she can read Dante in the original." *

Small indeed! But could *any* accomplishment afford consolation in such a case? Must a young lady forbear to learn Italian, but devote herself instead to the study of medicine, because of the possibility that she may one day suffer the loss of a child? Must all mothers be physicians?

Mr. Spencer next discusses in succession the claims of mathematics, physics, chemistry, biology, sociology, and psychology, as they severally bear on the maintenance of his five categories of activities; and the only inference that can be legitimately drawn from his line of argument is that these sciences should form constituent parts of the education of each human being, on the

* "The perfection of philosophic style is to approach as nearly as possible to that species of language we employ in algebra, and to exclude every expression which has a tendency to divert the attention by exciting the imagination, or to bias the judgment by casual associations."—Dugald Stewart, *op. cit.*, p. 265.

ground of their direct practical value to the individual; or, as he prefers to say, on the ground of their value for guidance.* It must be allowed that Mr. Spencer makes very plain what no one has ever disputed—that the sciences he names are of inestimable importance to the human race; but when he infers from this evident fact that each individual of the race, for the sake of his own guidance, must have all this knowledge as a personal possession, he fails to note the manner in which the law of the division of labor affects the distribution of knowledge. The largest inference that can possibly be drawn by legitimate means is that *Science should be taught.* With reference to the individual, the outcome of the whole matter is this: For purposes of guidance, he need learn only those sciences, or those parts of each science, which furnish practical knowledge of the direct order; while, for knowledge that he needs on occasion, or in emergencies, he must depend on specialists. In other words, we must do in respect of knowledge just what we do in respect of other things: some things we must acquire and own; some other things we had better buy or hire, and of these latter things our knowledge may be general, learned at second hand as literature.

In interpreting the matter contained in this section, it must be kept constantly in mind that I am discussing the claims of subjects on the ground of their *practical* value, or their value for *guidance.* It does not follow that a subject useless for individual guidance should not be

* "The general conclusion, then, from our review of Mr. Spencer's theory is, that its due satisfaction involves the assumption that every man is to be his own doctor, lawyer, architect, bailiff, tailor, and, I suppose, clergyman."—Joseph Payne, "Lectures on the Science and Art of Education" (London, 1880), p. 249.

studied by him. The pursuit of such a study can be defended on still higher and better grounds.

Up to this point the results of my inquiry may be tabulated as follows:

Education Values { 1. Practical. { 1. Direct (Immediate). 2. Indirect (Mediate). } 2. Disciplinary. }

Something is gained when we have sharply distinguished the practical value of a subject from its disciplinary value. If the foregoing analysis is correct, a given study may have a high value for guidance, and, at the same time, a low value as a mental gymnastic; and *vice versa*. The whole subject would be simplified by the identification of these two values, and, as the philosophic mind is ever aspiring after unity, it is not singular that the synthetic instinct of Mr. Spencer, uninstructed by practical dealings with education values, should lead him to unite two things that, in fact, are widely different; but one of the requisites of applied science is the making of exact discriminations, to the end that provision may be made for the specific cases with which art always has to deal. There is great gain to practical teaching by sharply marking the distinction just referred to; but a still higher degree of prevision is made possible by distinguishing direct practical values from indirect practical values. If the distinction is well founded, it exposes the specious fallacies of Mr. Spencer's first chapter, and makes possible the construction of a curriculum on a more rational basis than the one proposed in "Education." I shall now attempt to give a further extension to the previsions of educational science by marking a distinction in the second order of education values, the *disciplinary*.

In medical science there are agents known as *specifics*, from the circumstance that they affect a particular organ or effect a particular result; and there are other agents known as *tonics*, from the circumstance that they lend a general invigoration to the physical system. Specifics appear to act in the way of concentration, and tonics in the way of diffusion. Under the conception that the mind grows by exercise and by the assimilation of aliment, and that, to use Bacon's phrase, "every defect of the mind may have special receit," it seems probable, on *a priori* grounds, that disciplinary subjects may affect the mind either as specifics or as tonics; and all the observed facts in school-life seem to confirm the truth of this hypothesis. For example, it is a matter of common observation that the effect of mathematical study seems to be concentrated in that mode of mental activity known as deductive reasoning. The effect of this study is certainly limited, or, as we might say, local; for, as Mr. Bain observes, mathematics "does not teach us how to observe, how to generalize, how to classify;"* and it is equally apparent that it leaves unaffected the whole domain of feeling as distinguished from thinking. Indeed, mathematics would not be the incomparable instrument it is for the training of the deductive reason if it brought into play the emotional activities. The disciplinary value of local geography is of the specific type, for the study chiefly involves the effort of memory. The tendency of botanical study is to teach the art of classifying, and so it calls into play the power of observing and discriminating. The experimental study of physiology furnishes a training in inductive reasoning, and in this sense is a specific.

* "Education as a Science," p. 153.

Quite broadly distinguished from studies of the specific type are studies like history, geography, and literature, that affect the mind as a whole, involving both thinking and feeling, calling into play several distinct modes of intellectual activity, and so producing what is known as *culture.* The disciplinary effect of studies of this type I would call tonic. The distinction now pointed out, unlike the one previously noted, is one in degree or sphere, rather than in kind; though in extreme cases, like those of arithmetic on the one hand and history on the other, I think the element of feeling rises to such a height in the second instance that it produces a different *kind* of effect. Still, a rigid analyst might insist that some emotion is involved even in a discipline of the specific type. As my treatment of this subject is at best but tentative, there are several points on which I shall not speak very positively. Even the terms I have used to mark the distinction may not be the best. The terms *intensive* and *extensive* may best describe the two effects; and in marking the highest form of the tonic or extensive effect, I have often felt impelled to call the value of a subject that produces it its *culture* value; for, if I mistake not, the main elements in culture are catholicity or comprehensiveness of mind, and emotion, tempered, refined, and subservient to the intellect and the will.* It would seem that a study, to have a high culture value, must embody the following characteristics: it must be concerned with a unit that is vast and imposing, capable of inspiring the feeling of grandeur or sublimity; and, involving the main activities of the whole mind, must appeal strongly to the nobler instincts of humanity; and must impress the mind with the sense of a comprehen-

*For Plato's conception of culture, see p. 288.

sive, organic unity. All these marks are found in geography, literature, and history, as will be seen from the following statements: The unit of geographical study is the earth, regarded as the dwelling-place of man; the unit of literature is the aggregate of the best things thought by the human race; the unit of historical study is the aggregate of the most notable things done by the human race. In each case, the unit is imposing; embodies a very large human element; and, in the end, remains a comprehensive, concrete aggregate. It is to be observed that the conception of the final comprehensive aggregate is attained, first, by a process of discrimination, and then by a recombination of the proximate parts. We first apprehend and then comprehend. Study that ends in mere disintegration has no real culture value; for the conception of wholeness is essential to this end. If the Greeks had been a race of anatomists, the praises of Greek art had never been sung. In a minor degree, physiology may be a culture subject, provided the student does not proceed to dissection. Here is a typical illustration of two education values absolutely different in kind. For practical ends, the student should dissect; for purposes of *culture*, he should not. Here are also indicated two different methods of study. For practical ends, a subject like physiology should be studied experimentally; for the purpose of culture, it should the rather be studied as literature. In one respect, astronomy is a culture subject *par excellence*—the unit of study has such vastness and complexity. In another respect, the human element, it is inferior to geography. Geology, as an independent study, has still less culture value than geography—it has no independent unit that is imposing; though, when superadded to geography, it raises the

culture value of the latter. Chemistry has scarcely any culture value as it has been defined; it has neither of the three marks required. The same may be said of physics, botany, mineralogy, and zoölogy. If there be an exception, it is in the case of botany and zoology, in which there is the phenomenon of life.*

In what has preceded I have not attempted to form a descriptive table of education values, but merely to illustrate some distinctions that I think are involved in the construction of such a table. From the point of view

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* "There is still another art with which the universities stand in close relation, and which is the highest of all arts—the art, not of gaining a livelihood in the service of society, but the art of living. This is taught through philosophy, history, literature, and æsthetics. This, the last and greatest of the arts—*ars vivendi*—requires no special adaptation of university machinery; for it is taught through knowledge, through thought, through habitual converse with humane letters. This art of rational living is summed up in the word 'culture,' to which the physical sciences may make contributions, but which they can never of themselves effect. It is by thought on things human that the mind of man is cultured; thought on the things of sense, in the form of physical science, being never more than subsidiary and contributory to true culture. . . . This culture, or art of rational living, is the highest aim of university life. It is promoted chiefly through the philosophical faculty, within which are included philosophy in its widest acceptation, economics, jurisprudence, history, literature, æsthetics, and, let me add, the principles of education, which is simply the exposition of the way in which a human soul grows to the full fruition of its powers."—Laurie, "The Training of Teachers," pp. 267, 268.

"While the study of the physical sciences tends to give power over the material forces of the universe, it leaves untouched the greater forces of the human heart; it makes a botanist, a geologist, an electrician, an architect, an engineer, but it does not make a man."—Joseph Payne, *op. cit.*, p. 263.

now obtained it may be profitable to review these contrasts. On what ground can we defend the general study of the higher mathematics? Chiefly for its disciplinary value, and this discipline is of the specific type. This is not a culture subject in any true sense of the term. Only a partial (weak) defence of the higher mathematics can be made on the ground of its *practical* value, for this is mainly of the indirect order. It is not in one case in a hundred that this knowledge is directly useful to the individual for his own guidance. The formal description of the higher mathematics as to its education value may be thus (tentatively) stated: direct practical value, very low; indirect practical value, high; specific disciplinary value, very high; tonic disciplinary value (culture value), low. The description of literature would run somewhat in this way: direct practical value, low; indirect practical value, low; specific disciplinary value, low; tonic disciplinary value (culture value), very high. To illustrate the fact that the education value of a subject depends, not alone on its own intrinsic nature, but as well upon the manner in which it is pursued, I will give three descriptions of physiology: (1) as it is pursued out of an ordinary text-book in a high school; (2) as it is studied experimentally or inductively; and (3) as it is learned by a mature scholar by the study of a book, or as literature. I will tabulate my estimates as follows:

	First.	Second.	Third.
Direct practical value . . .	Moderate.	Moderate.	Moderate.
Indirect practical value . .	Moderate.	Very high.	Moderate.
Specific disciplinary value . .	Low	High.	Low.
Tonic disciplinary value (Culture value)	Low.	Low.	High.

The statement has already been made that not only are the practical value and the disciplinary value of a subject *not* identical, as Mr. Spencer assumes, but that, on the contrary, they are inversely proportional. I am not warranted in affirming that this statement is true in all cases, but that it is quite generally true I feel assured. Arithmetic and history furnish examples of my statement. To be intensely practical to the business man, arithmetic should be taught as a system of rules, or, better still, as a manipulation of tables, as in the case cited; the nearer an accountant approaches an arithmetical machine the more rapidly and the more surely can he do his specific tasks. To be mindful of the *rationale* of processes would sadly hamper Mr. Spencer's accountant.

> "The centipede was happy quite,
> Until the toad in fun
> Asked, 'Pray, which leg comes after which?'
> Which worked her mind to such a pitch,
> She lay distracted in a ditch,
> Considering how to run."*

Now arithmetic, taught in this mechanical way, while having a high value for guidance, has almost no value whatever for discipline; while arithmetic, taught as a science, has a very high value as a specific discipline, but has a much lower practical value than in the previous case. It is a fact of common observation that a pupil well taught in the science of arithmetic cannot compete with the merchant's or the grocer's clerk in rapid and accurate computation. Plato was at least instinctively right in declaring that, for purposes of a liberal education, arith-

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* Quoted from "The Universities, in their Relation to the Training of Teachers," by Rev. R. H. Quick.

metic should not be cultivated "with a view to buying and selling, as merchants or shopkeepers."

Mr. Spencer, as is very proper, considering his theory of education values, has a small opinion of history. "That kind of information which, in our schools, usurps the name of history—the mere tissue of names and dates, and dead, unmeaning events—has a conventional value only; it has not the remotest bearing upon any of our actions, and is of use only for the avoidance of those unpleasant criticisms which current opinion passes upon its absence."* History, according to this writer, has a value for guidance only when taught as a philosophy (pp. 65–69). It is fair to say that, even in our highest institutions of learning, historical teaching very seldom attains this purpose; and yet it is equally certain that the subject, as taught in all our better schools, has an almost incomparable culture value, second, I think, only to literature. The special point I have in mind is this: for purposes of daily guidance, history has but very little value; while, for purposes of culture, it has a very high value.

Mainly for purposes of illustration, I add an analytical table of education values. I do not presume that these values are the true ones. They represent no small amount of study, but doubtless further examination will change more than one of them. I have a hope that some who are cultivating educational science will give me the benefit of their markings as the basis of a more accurate table. I have attempted to determine only three degrees of value, *high*, *medium*, and *low*.

* "Education," p. 36.

Subjects.	Practical.		Disciplinary.	
	Direct.	Indirect.	Specific.	Tonic.
Reading.....	H.	L.	L.	L.
Grammar.....	M.	L.	H.	M.
History.....	L.	M.	L.	H.
Geography.....	L.	M.	L.	H.
Arithmetic.....	M.	L.	H.	L.
Physiology.....	L.	H.	L.	L.
Physics.....	M.	H.	L.	M.
Botany.....	L.	M.	L.	M.
Literature.....	L.	M.	L.	H.

By making a distribution into three groups, this table may take the following form:

Subjects.		Practical.		Disciplinary.	
		Direct.	Indirect.	Specific.	Tonic.
Reading.	Standards for Marking.	H.	L.	L.	L.
Physiology.		L.	H.	L.	L.
Arithmetic.		M.	L.	H.	L.
History.		L.	L.	L.	H.
Literature.	Groups.	L.	H.	L.	H.
Science.		M.	H.	L.	M.
Mathematics.		L.	H.	H.	L.
Geography.	Culture Trivium.	L.	H.	L.	H.
History.					
Literature.					

A systematic discussion of education values would need to be directed by a set of rules, clearly stated and resolutely followed. I venture to suggest a few guides of this kind.

1. Some standards of marking should be selected, that is, certain studies which exhibit maximum values of each type. In my markings I have used the following standards: for *direct practical* values, Reading; for *indirect practical* values, Physiology; for *specific disciplinary*

values, Arithmetic; for *tonic disciplinary* values, History.

2. The reflex or disciplinary effect of a study must be sharply distinguished from its instrumental effect in the way of guidance. On *à priori* grounds, I think there is a reasonable presumption that a high value of one order precludes a high value of the other order.

3. The *direct* instrumental value of a study must be as sharply distinguished from its *indirect* instrumental value. There are still stronger *à priori* grounds for thinking that these values are inversely proportional.

In studying these values, it is necessary to take the case of pupils whose future vocations have not yet been determined.

4. It would seem that if the intensive (specific) effect of a study be high, its extensive (tonic) effect must be low; and that, if its extensive effect be high, its intensive effect must be low. A subject cannot have a maximum effect of both orders; but it may have a low or medium value of both orders.

I have sometimes employed a special analytical table for the examination of disciplinary values. The following is an example of what I mean:

Subject.	Memory.	Observation.	Reason.	Imagination.	Feeling.	Comprehension.
Arithmetic.	M.		H.			
Botany.	H.	H.				M.
Geography.	H.		M.	H.	M.	H.
History.	H.			H.	H.	H.
Literature.	H.			M.	H.	M.
Physics.	L.	M.	M.			
Physiology.	M.	M.				L.
Grammar.	M.	H.	M.			

In this table I have tried to indicate, in each case, the

modes of mental activity that are chiefly involved, and also the different degrees in which they are affected. A blank does not indicate that no effect is produced. By comprehension I mean the mental grasping of a definite whole. A study that serves this purpose must be concerned with a unit that is large and imposing.

I beg leave again to remind the reader that this presentation is tentative. The greatest assurance I feel is that the general line of my thinking is right.

A considerable time has now passed since the foregoing was written, and I have repeatedly thought and taught over the ground covered by this discussion. In the main, I feel confirmed both in the distinctions in values which I had noted, and in the practical utility of these distinctions as sources of scientific prevision. On one point of importance, however, my opinion has been changed, and, in making this revision, I prefer to leave the first statement in its original form. My purpose is not so much to express the truth as to find it.

In the preceding analysis I have spoken of the highest form of the disciplinary effect of a study as its *culture* effect. It now seems to me that the culture value of a subject is so distinct in kind from the merely practical and disciplinary values, as to deserve to be set off by itself. The distinction drawn between the two disciplinary effects is valid, and the two terms *specific* and *tonic* may still serve to note this difference; but culture is not so much a state of potency as a possession; or, rather, it is a state of potency accompanied by the pleasing consciousness of possession. Under this view knowledge may be acquired for three distinct purposes: (1) for the practical use that can be made of it; (2) for the mental power

generated by the efforts at acquirement; (3) for the mental satisfaction coming from the conscious possession of it. If I mistake not, that state of soul we call culture implies serenity, poise, and contemplative delight. A mind might be perfectly formed, trained, or disciplined, yet, if it were not furnished as well, it could not be called cultured. From this point of view the statement concerning the culture value of mathematics, made in the earlier part of this essay, needs to be qualified. Any subject pursued in such a way and to such an extent as to lead to a great breadth of view, has an element of culture in it; for the cultured man, as Plato says, "has magnificence of mind, and is the spectator of all time and all existence."

The analysis of education values, then, which now seems to me valid, is as follows:

- Education Values.
  - 1. Practical.
    - 1. Direct.
    - 2. Indirect.
  - 2. Disciplinary.
    - 1. Specific.
    - 2. Tonic.
  - 3. Culture.

While the best disciplinary effect of study is secured by requiring the mind to work under high tension, I think it will be found that a much lower tension is favorable to the culture aim. To undertake to teach history, geography, and literature for the distinct purpose of discipline would be a mistake, and would end in failure. These studies produce their best effect through a process of slow infiltration. The matter is to be elaborated and assimilated, and so time is a factor of first importance. A method that is conversational and discursive is best, something resembling the Greek dialectic.

Education is now suffering from the well-intended efforts of narrow constructionists. With some, the practical or utilitarian ideal is set up as the almost exclusive aim. Mr. Spencer is of this class. Others, with equal partiality, affect the disciplinary ideal, and so put a low value on subjects which do not directly and readily minister to training. The thought of teachers should be turned to the importance of contemplative knowledge. Knowledge that has neither a practical nor a disciplinary value may still minister in an essential manner to the requirements of complete living. History, literature, and geography certainly serve their highest purpose when they minister to our intellectual pleasures; and I think reflection will make it appear that the general study of science is best defended on this ground.

This doctrine of the value of knowledge as a source of intellectual pleasure has a most important bearing on the question of moral education. Truer words than these have not been spoken: "To cause gross natures to pass from the life of the senses to the intellectual life; to make study agreeable, to the end that the higher pleasures of the spirit may struggle successfully against the appetites for material pleasures; to put the book in the place of the wine-bottle; to substitute the library for the saloon; in a word, *to replace sensation by idea*—such is the fundamental problem of popular education." *

* Gabriel Compayré, "History of Pedagogy" (Boston, 1886), p. 381.

CHAPTER IV.

THE CONCEPTION OF MENTAL GROWTH, AND SOME APPLICATIONS OF THIS DOCTRINE TO TEACHING.

THERE is the same reason why the professional teacher should have an articulate knowledge of psychology as there is that the professional physician should be well versed in physiology. The physician needs to know the structure of the human body and the mode of its organic activities, in order that he may adapt means to ends; for skill in an art consists in this deft adaptation. The teacher's art is addressed primarily and principally to the mind; and, if this art is to be rational, the teacher must know the structure of this organism, and the mode of its organic activities. This knowledge of psychology is professional knowledge, strictly so called; *i. e.*, the knowledge that chiefly differentiates the teacher from the scholar.

The most instructive of the general characteristics of mind is its self-activity in the line of growth.

This conception involves the following particulars:

1. There must be a supply of something in the nature of aliment that can employ these activities and thus sustain this growth. In other words, there must be something upon which the organism can react in such a way that growth may take place through a process of elaboration and assimilation. The most general name for this aliment is knowledge.*

* This conception of knowledge is well authorized. The following is a good statement of the thought: "Knowledge is the food

2. The elaborating instrument is primarily automatic, and has uniform and predetermined modes of activity; and in this functional activity there is absolute continuity from infancy to maturity. In other words, the functional activity of the mind is the same whether in the child or the man; just as the functional activity of the stomach is the same in both cases. In both departments of growth, the organism may react on one kind of aliment and not on another; but if there is reaction at all, it is uniform in its mode.

3. The kind of growth will depend chiefly on two things: (1) The state of the elaborating organism, as weak or strong; and (2) the kind of aliment that is assimilated. There are innate differences in mental constitution that determine some differences in the results of growth. That marked differences in mental regimen will produce variations in growth is a fact too obvious to require comment.

4. As the mind is constitutionally automatic, mental growth is mainly unconscious; the rule being that when aliment is supplied at the right time, in the right form, and in due quantity, its elaboration will proceed without further assistance.

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of the mind. In order that food may strengthen the body, it must be duly digested and assimilated. And so knowledge must be not merely grasped, in its rudiments, by the indiscriminating memory, but it must be comprehended and, so to speak, digested, in order that it may nurture the mind."—Johnson's "Cyclopædia," article "Education."

Bacon's conception of knowledge as mental food is expressed in his quaint way as follows: "Some Bookes are to be Tasted, Others to be Swallowed, and Some Few to be Chewed and Digested."—"Of Studies."

5. The automatic action of the mind, whereby it reacts upon aliment, may be stimulated and directed by deliberate purpose. Thus a pupil's mental growth may be purely spontaneous or fortuitous, or he may determine that he will think on a given subject for a given purpose, or his teacher may determine the purpose and the subject, and then *provoke* the process of thought by some form of stimulation. The normal stimulant for this specific purpose is a question. Such a question is a demand on the pupil's resources, and the effort to supply this demand determines some mode of mental activity.

6. The elaboration of aliment implies some loss of identity. The original presentations may disappear as such, but will reappear in some higher form. The highest form of this reappearance is opinion, belief, character, common-sense, faculty, power. A presentation has served no high purpose if it has not suffered some degree of transformation. In many cases, the presentation may have served its high purpose and then have absolutely disappeared. In this region we find the uses of forgotten knowledge.*

7. Time is an all-essential element in mental growth.

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* Montaigne illustrates this transformation of mental aliment as follows: "'Tis a sign of crudity and indigestion to vomit up what we eat in the same condition it was swallowed, and the stomach has not performed its office unless it have altered the form and condition of what was committed to it to concoct."

Mr. Bain quotes the following Scripture to illustrate this doctrine: "Except a corn of wheat fall into the ground and die it abideth alone; but if it die, it bringeth forth much fruit."—John xii, 24.

A striking paragraph on "The Uses of Forgotten Knowledge" may be found in Mr. Fitch's "Lectures on Teaching" (Cambridge, 1883), p. 145.

There may not only be a long interval between the reception of a presentation and its elaboration into a higher form, but the progressive steps in this transformation are indeterminate, and so involve indeterminate amounts of time.

8. The distribution of aliment is subject to the following law: the faculty that is strongest, or that needs the least, will appropriate the most; while the faculty that is weakest, or that needs the most, will appropriate the least. In other words, the strong faculties will grow stronger, and the weak, weaker. If the purpose is to promote a symmetrical growth, aliment must, by some means, be diverted into these unaccustomed channels. The only mode of doing this is by calling the weak faculties into use. Exercise will determine a flow of aliment; nurture will give new strength; strength will permit facility; facility will make exercise agreeable; and so, by means of reactions and interactions, there is a virtual recreation of faculty; or, power *in esse* has been evolved out of power *in posse*.

Along with this promotion of symmetry by excitation, there should go some clipping of an exuberant faculty, by holding it in abeyance. The partial disuse of such a faculty will leave some energy unemployed, and this can be transferred to the account of a weaker member.

Distaste for a study generally indicates a loss of tone in some part of the mental organism; and instead of this being a valid plea for neglecting a subject, it is rather to be regarded as an argument for its pursuit. There is, at least, this element of truth in the ascetic belief in disagreeable studies.

On the contrary, with the purpose of symmetrical culture still in mind, the fact that a pursuit is very easy,

or very agreeable, may be a reason why it ought to be discouraged. When the period of general training is past, there is no doubt that pursuits should lie in the lines of one's predilections.

9. The second condition of growth—aliment being the first—is *exercise*. Two general modes of mental activity should be distinguished. First, there is the mental act whereby knowledge is gained, and then the subsequent act by which it is applied to use. Absolutely speaking, the mind is never passive, for activity is one of the essential marks of mind. States of suffering are states of intensest activity.* Even when the process of learning is most mechanical, there must be some kind and degree of mental reaction, otherwise acquisition would be impossible. But, during all processes of instruction, the mind must constantly react on the presentations made to it, and this reaction is the first mode of mental exercise. So far, we may say that the process of alimentation is itself a disciplinary process; that the mind is formed while being informed. So far as I am able to see, the precept, "first form the mind, then furnish it," is an absurdity and an impossibility. The true conception is, that the mind is formed while being furnished.

The second mode of mental exercise consists in the use of the knowledge that has been acquired, or in the application of knowledge to the production of some determined result. These two phases of exercise may be distinguished in memory and recollection, in the repro-

* "Patience is no negation. It is a vigorous and sustained action, amidst outward stillness, of some of the most powerful faculties with which the human being is endowed, and primarily of its powers of firmness and resistance."—Harriet Martineau, "Household Education" (Boston), pp. 181, 182.

ductive and the constructive imagination, in the learning of a mathematical truth and its application to use, etc., etc.

10. We must distinguish accumulation from organization; that is, the acquisition of material from its elaboration into structure, faculty, and power. It is customary to state this distinction as that between growth and development;* but I am unable to conceive of development except as a mode or a high form of growth. The facts in the case seem to be these: (1) The materials of thought may be collected in advance of their actual transformation into thought; and (2) this transformation is a process of infinite gradations. But it may be described as a progress from vagueness to definitude, or from a low type of organization to progressively higher types of organization. "When I was a child," says Paul, "I thought as a child, I spake as a child, I understood as a child; but when I became a man, I put away childish things. For now [in infancy and here] we see through a glass, darkly, but then [in maturity and in the hereafter] face to face."

These facts should guard us against two false assumptions: (1) That accumulation and elaboration should proceed *pari passu;* and (2) that a child's knowledge should necessarily be clear and definite. On the contrary, the indications are that accumulation may precede elaboration by an indefinite period; that the necessary gaining of material is *pro tanto* antagonistic to transformation; and that the normal state of a child's knowledge is that of confusion, vagueness, and indefiniteness. The conception of mind as a growth makes this a fundamental

* See Sully, "Outlines of Psychology" (London, 1884), pp. 40, 54; Spencer, "Education," p. 271.

principle of instruction: there should be a gradual evolution of definitude out of confusion.

11. The fact that material must be collected somewhat in advance of its transformation, clearly points out one of the functions of memory, and settles a disputed question in practical teaching, viz., whether one may memorize what may not at the time be understood. From the view of the mental processes that has been stated, it follows that the crude material of thought should be held, so to speak, in store; and this holding in store is the primary function of memory. It follows further, from this conception, that matter presented in propositions not only *may*, but *must* be memorized before it is understood; for the understanding of a thing is synonymous with its elaboration or its transformation, and elaboration is impossible unless the material is held within the range of the mind's activities. For truth's sake, it is necessary to distinguish memory before elaboration from memory after elaboration. We must memorize in order that we may understand, and then hold in memory what we have understood. The only real question at issue is whether memorizing should be formal or informal. As formal memorizing favors clear representation, it is worthy of much more respect than is now paid it.*

12. The normal mode of the mind's reaction upon its material is, first, by resolution or disintegration, then by reconstruction or reintegration. The normal mode of

* "Every rational curriculum of elementary study must be based on the fact that the observing are called into action before the reflecting faculties; in other words, that the food must be swallowed before it is digested; though I believe it to be an educational fallacy to maintain that therefore no food should be swallowed that cannot be instantly digested."—Joseph Payne, *op. cit.*, p. 256.

progress is from apprehension to comprehension, from confused aggregates to articulate wholes; and the normal process is analysis complemented by a reciprocal synthesis. This doctrine is opposed to the current assumption that a child's knowledge should, in the first instance, be built up constructively out of elements supplied by the teacher. The true conception is, that the mind is to find elements by the disintegration of some aggregate, and then is to reconstruct a new whole out of the parts of this dismembered aggregate; and that this disintegration and reintegration constitutes thought proper.

13. The material that serves for the mind's reactions may be presented to it immediately or mediately; that is, it may be intuitive or representative—presented without the mediation of language or with such mediation. All knowledge of the past is impossible save through the mediation of symbols; knowledge of the remote and the inaccessible is impracticable save through such mediation; and, through the limitation of time, very much that is near must be made known by representation. As a consequence of the division of labor, and as a condition of progress, knowledge at first hand must stand to knowledge at second hand as a part to a constantly and rapidly increasing whole.

An intuitive presentation is concrete in the strict and limited sense of that term; it is a congeries of many parts or qualities, a complex thing, appealing directly to the senses; and, if the mind reacts upon it, it must be in the way of discrimination or analysis; it cannot be brought into relation with other knowledge, cannot be assimilated or organized, without a discovery of its marks or qualities. Such discovery is always analytical.

Compared with an intuitive presentation, a representa-

tive presentation, or one made by means of symbols, is always abstract; for language always employs general terms. Strictly speaking, therefore, purely concrete instruction is impossible; but, by general consent, statements that refer to an individual thing, and that make a direct appeal to sense, are called concrete; while statements referring to a class, and making no direct appeal to sense, are called abstract. Strictly speaking, there is no absolute line between concrete and abstract instruction; but, in general, the degree of concreteness may be estimated by nearness to sense, and the degree of abstractness by remoteness from sense. From the psychological point of view, the essential thing to note is that whether the presentation be intuitive, whether the statement be (relatively) concrete, or whether it be abstract, the material thus offered the mind is some complex whole; and, if the mind reacts upon it, the mode of reaction must be analytical. In other words, all presentations, whether concrete or abstract, conform to the great psychological law, that "the first procedure of the mind, in the elaboration of its knowledge, is always analytical."

The following statements illustrate the almost insensible transition from the so-called concrete to the abstract. The simple truth is, that both elements appear in each statement; but that the concrete predominates in the first members of the series, and the abstract in the last:

1. This rose (exhibiting the object) is red.
2. That rose was red.
3. That rose was beautiful.
4. Roses are beautiful.
5. Rose is a beautiful color.
6. Beautiful colors are admired.
7. "A thing of beauty is a joy forever."

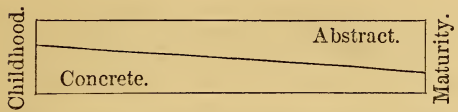
It will be observed that, in passing down this series,

there is a growing recession from sense, and an increasing extension of classes. Each statement, whether concrete or abstract, is a complex whole, which the mind must resolve before it can be understood; and the so-called concrete statements permit the easier resolution, because they are the more likely to fall within the range of the pupil's experiences, and because the classes which they involve, being narrower, it is easier to detect an individual of the class referred to.

Suppose this question is asked: "Shall I make my instruction largely in the concrete, or may it be largely in the abstract?" The question stated in this general manner cannot be answered. If this qualification be added, "My pupils are young, and their power of thinking low," the answer is obvious: "Your instruction should be largely in the concrete." Or, if this be the qualification, "My pupils are mature, and are good thinkers," the answer is just as obvious: "Your statement may be in the abstract." In other words, if this famous rule were changed to read, "First the abstract, then the concrete," it would coincide with the general and legitimate practice of all schools above the primary grade.

Concrete statements and abstract statements are both legitimate, because they all conform to one of the primary laws of the mind's activities: *The first reaction of the mind upon the presentations made to it is always* ANALYTICAL.

If the precept, "First the concrete, then the abstract," were thrown into this form, it would express a useful truth: "Primary instruction should be largely of the concrete type; advanced instruction should be largely of the abstract type." This truth may be illustrated graphically as follows:



This is the interpretation: "In the instruction of children, the concrete should predominate, and in the instruction of adults, the abstract; and, in passing from childhood to maturity, instruction in the concrete should be gradually superseded by instruction in the abstract."

The assumption that children are unable to resolve or interpret abstract statements is one of the popular errors of the day. In fact, they are as quick to comprehend a truth presented to the mind's eye as to comprehend a fact or an object presented to the bodily eye. In both cases apprehension is easy, and comprehension relatively difficult; but this difficulty is no greater in the first of the above cases than in the second.*

14. As the first stage in thought proper is the resolution of aggregates, small or great, it is important to note the fact that the great instrument of mental analysis is language. Let us suppose that a general truth has been formulated in words; in what way is the statement to be interpreted to the end that it may be comprehended or understood? If the language is significant, each word arrests the attention upon one element in the aggregate, so that, when the series of words has been passed in review, the complex whole has been broken up into a larger

* "If it should be asked, how early, or at what period of life, men begin to form general conceptions? I answer, as soon as a child can say, with understanding, that he has two brothers or two sisters; as soon as he can use the plural number he must have general conceptions."—Thomas Reid, "Essays on the Intellectual Powers of Man" (London, 1843), pp. 327, 328.

or smaller number of parts. Counting is a ready illustration of this general process. In passing regularly from one upward, each number is a determinant; and when the last number has been reached, what at first was an indefinite aggregate has been resolved, say, into fifty parts. Analysis by means of language is more difficult than this, because the word must first be translated into a notion, and then the notion individualized; but, as mere processes, reading and counting, are essentially the same, they serve to call attention to marks, and the determination of marks is a process of resolution.

The more general a term is, that is, the fewer its marks and the greater the number of individuals that it contains, the more difficult it is to interpret it—that is, to translate it into an individual image. Hence the observed fact that so-called concrete statements are more easily understood, or resolved, than abstract statements. At the same time, another important truth becomes obvious—that the pupil's ability to interpret a general statement is determined by his knowledge of language.

15. Whether instruction shall be concrete or whether it may be abstract, that is, whether the terms shall be near to sense or whether they may be remote from it, is thus a question which depends very largely on the child's knowledge of words and his ability to interpret language, and so does not admit of any absolute solution. Only a general statement can be made, somewhat in this form: The terms employed in the instruction of children should be narrow in extent and near to sense; while those employed in the instruction of the more mature may be of wide extent and remote from sense. All instruction must employ general terms, and there is always the danger that these terms may not be individualized, or, rather,

realized. The remedy is in a careful study of words, and in the testing of the pupil's interpretation by requiring him to express the meaning by the use of other symbols.

16. Sense-impressions are the original material out of which the mind, by its elaborative processes, constructs the whole fabric of thought. Out of a comparatively few primary notions, by combination and permutation, the mind is furnished with an almost infinite variety of new constructions.* New knowledge is but a new combination of old material, and the most of our thinking consists in discovering or establishing relations between part and part, and between parts and some containing whole. When a sense-impression has once been established there is no further need of the object that produced it. Forever after, the symbol of the thing is all that the processes of thought require. The materials for thinking are not objects, but ideas; and, in general, thought proper takes place with the greatest facility and sureness in the absence of sense-stimulation. The assumption that intense sense-activity is conducive to thought proper is a vulgar error. The senses have served their purpose when they have furnished the mind

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* "The senses supply the pabulum or nutriment which the intellect assimilates or elaborates according to its own proper laws. The highest manifestations of intellect, abstract thought and reasoning, illustrate this dependence of intellectual activity on the elements, materials, or "data" of sense. The growth of intellect by repeated exercise thus implies a continual supply of sense-materials, a multiplication of sense-impressions, to be worked up into intellectual products."—Sully, *op. cit.*, p. 48.

"All knowledge takes its rise in the senses. No intellectual work, such as imagining and reasoning, can be done till the senses have supplied the necessary materials."—Ibid., p. 107.

with the crude materials of thought. A prolonged and acute training of the senses is irrational in its tendency: it magnifies the animal and minimizes the man. The movement of the animal intelligence is invariably outward; it makes no return upon itself. The movement of the human intelligence is somewhat outward, but characteristically inward. So far as it is rational, it returns upon itself in the act of reflection. The proof of this doctrine lies in the incompatibility of a confirmed outward flow of activity with that inward flow which is the necessary condition of thought proper; and also in the actual state of the savage intellect, where we observe an acute training of the senses, conjoined with almost absolute torpor of the intellect. In fact, the savage is a living example of persistent sense-training.

The inference to be drawn from this doctrine is, that a training of the senses that more than suffices to furnish the mind with the crude material of thought is downward in its tendency.*

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* "I really do not know what it is that remains to be desired, in regard to the ordinary purposes of life, if the body be sound and in high health, and the mind be alert. It is to the savage, or it is to men exercising special callings of an inferior sort, that there can be much benefit in having the senses sharpened to an extreme acuteness.

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"In truth, it may be questioned whether a gentleman might not really wish himself wanting in such legerdemain perfection of the senses as would be likely to suggest to others the belief that he had passed his childhood under the tuition of a gang of gypsies.

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"For the rest, that is to say, whatever reaches its end in the bodily perceptions, I think we can go but a very little way without so giving the mind a bent toward the lower faculties, as must divert

17. Feeling and thinking are mental states in such broad contrast that, in their extreme manifestation, they are mutually exclusive. That is, intense feeling is fatal to thinking, and intense thinking deadens feeling. It seems to be one of the ultimate facts of our mental constitution, that the tendency of wholeness is to excite and sustain feeling, and the tendency of analysis is to prevent or destroy feeling. Conversely, feeling resists the decomposition of aggregates, and so opposes thinking; and thinking, so far as it is analytical, destroys the emotional element in an object.

Some of the more important inferences to be drawn from this doctrine are the following:

(1.) Sense activity, *per se*, is unfavorable to thinking. This has been noted in a general way, in the preceding section.

(2.) The normal condition for thinking is, in Mr. Bain's happy phrase, "the quiescence of the emotions." Interest in the individuality of a thing, partisanship, prejudice, passion, affection, are each and all the enemies of thought proper. They resist discrimination and insight, and so becloud and betray the judgment. The common saying that "love is blind" involves a whole philosophy.

(3.) The direct tendency of mental culture is to weaken the empire of passions and emotion; and, consequently, mental culture is at the same time moral culture.

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it from the exercise of the higher. A man may be a proficient in active sports and gentlemanly gymnastics, compatibly with elegance and elevation of mind; but it is another thing so to send the soul outward toward its perceptive consciousness as to imbue it with the organic sensitiveness of the lynx, the hare, or the spider." —Isaac Taylor, "Home Education" (London, 1867), pp. 106, 107.

(4.) As the purpose of art is to please, an analysis of a work of art that just suffices to raise the quality of its wholeness is conducive to its high purpose; while any analysis that tends to injure or to destroy this organic unity defeats the supreme purpose of the artist. Proximate analysis heightens the notion of organic unity, while ultimate analysis, especially if it serves some technical end, as surely destroys such unity. Literary criticism, as now administered in many secondary schools, transgresses this law of æsthetic unity.

18. We state a well-known physiological fact when we say that the feeling of hunger is the motive for eating; and it is a truth of the same order, but of wider significance, to state that the feeling of interest is the motive that leads the mind first to apprehend and then to comprehend. I do not forget that the earliest movement of the mind is automatic or instinctive, nor that automatism always plays an important part in mental growth; but I here refer to another characteristic fact, that the larger part of mental activity is volitional, and that the will is stimulated by motive. Perhaps the clearest conception of the mechanism of motives may be gained by regarding them as forces that act, some by *attraction*, and others by *propulsion*. In other words, we may do a thing because there is some force ahead of us *drawing* us toward the object; or because there is some force behind us *pushing* us toward the object. Pleasurable motives affect us in the first way, and painful ones in the second way. Under the deft manipulation of motives, teaching becomes a fine art; and an adequate exposition of this theme would constitute the most valuable chapter in applied psychology. I can do no more than state a few practical observations:

(1.) The ultimate aim of the teacher should be to establish motives of the attractive sort, that will act continuously and powerfully. Perhaps a love of knowledge for its own sake, or a confirmed taste for intellectual improvement, is the highest and most comprehensive motive that the teacher can seek to establish. But this motive must be regarded as the last term of an ascending series.

(2.) A less diffuse, but more intense, motive is what Mr. Bain terms "intrinsic charm," a feeling developed and sustained by the particular subject in hand. A ready illustration of this motive is the feeling excited by a work of fiction. It is possible that the sustaining motive in the study of geometry or of grammar may be of this sort.

(3.) Before the motive of "intrinsic charm" can be brought into service, it will often be necessary to arouse the feeling of *pleasure in prospect*. *Per se*, a study may be uninteresting; but if the pupil can be made to see that some future good is involved in it, he will endure some degree of present discomfort. But when the study is once fairly under way, it is always possible to awaken the feeling of interest in the subject itself.

(4.) Closely related to the preceding is what may be called *borrowed interest*, from the circumstance that an enthusiasm manifested by a teacher, by classmates, or by a friend, will often induce a like feeling in the breast of the learner. Inherited predilections and antipathies are very common and very powerful motives.

(5.) At this point we probably cross the line separating the attractive from the propelling motives. It is doubtless to be regretted that it should ever be necessary to resort to these *vis a tergo* motives; but, accepting things as

we find them, as we are very often bound to do, we are obliged to employ stimulants of the painful sort. But these modes of stimulation should be regarded as artificial and temporary, to be superseded, as soon as possible, by the attractive motives first described.

CHAPTER V.

THE GENESIS OF KNOWLEDGE IN THE RACE.

Doubtless the broadest generalization yet reached, in educational science, is this: "The education of the child must accord, both in mode and arrangement, with the education of mankind as considered historically; or, in other words, the genesis of knowledge in the individual must follow the same course as the genesis of knowledge in the race."* Mr. Spencer attributes the enunciation of this doctrine to Comte, though Condillac had previously drawn up a scheme of education avowedly based on this assumed principle.†

Mr. Spencer's proof of this doctrine is to this effect: what is true of the aggregate must be true of each of the units comprising the aggregate; the race acquired its knowledge in a certain way, and therefore each individual of the race must acquire his knowledge in the same way. The word Must, in Mr. Spencer's thought, at once involves us in a curious dilemma. Had he said Should, or Ought, we might be forewarned against an error; but if it be true that there is but one way in which the individual can gain his knowledge, as Mr. Spencer declares,‡

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* Spencer, "Education," p. 122.

† "Œuvres de Condillac" (Paris, 1798), tome v., pp. i.–xlix.

‡ "As the mind of humanity, placed in the midst of phenomena, and striving to comprehend them, has, after endless comparisons, speculations, experiments, and theories, reached its present knowledge of each subject by a specific route, it may rationally be in-

then error is impossible; the current mode of acquisition is the normal mode, and to preach a reform in this particular is an inexcusable waste of breath. But, as a matter of fact, Mr. Spencer prescribes a radical reform; it follows, therefore, that the genesis of knowledge in the individual need not of necessity be the same as the genesis of knowledge in the race. The only form in which the question can be discussed is this: *Should* the individual gain his knowledge in the same way in which the race as a whole gained its knowledge? The answer depends on the manner in which we interpret the "genesis of knowledge in the race." Two interpretations are possible, one of which makes Mr. Spencer's assumption a truth and the other an untruth. I will now state what I conceive to be the "genesis of knowledge in the race."

It will be granted that in knowledge, as in wealth, the race has made progress from age to age, and even from generation to generation. Now progress is possible only under this condition: *inheritance supplemented by individual acquisition.** Without inheritance there can be

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ferred that the relationship between mind and phenomena is such as to prevent this knowledge from being reached by any other route; and that, as each child's mind stands in this same relationship to phenomena, they can be accessible to it only through the same route."—"Education," p. 123.

* "The science of humanity, like humanity, ought to be progressive; and there is progress only on two conditions: first, to represent all one's predecessors; then, to be one's self, to sum up all anterior labors, and to add to them."—Cousin, "History of Modern Philosophy" (New York, 1869), i., p. 212.

"There is not a person in a civilized state who does not share in the inheritance of institutions, knowledge, ideas, doctrines, etc., which come down as fruits of civilization. We take these things in by habit and routine, and suppose that they come of themselves,

no progress; for then, each generation must start where the preceding generation started. And progress is quite as impossible without individual acquisition; for in this case each generation would stop where the preceding generation stopped. If we conceive the race as consisting of a succession of generations, the law of progress will stand somewhat as follows: A; I (A)+A; I (2A)+A; I(3A)+A; I (4A)+A; I (5A)+A. I indicates what each generation inherits, and A what it adds to its inheritance. To accept no part whatever of capitalized experience is an impossibility. In climate, in society, in language, in means of communication, in heredity, in a thousand ways that might be enumerated, we are the involuntary heirs of all past ages; and to renounce this inheritance, and to start even within a thousand years of where the race started, is an absolute impossibility. The law of inheritance is involved in the division of labor, for in the lifetime of our benefactors we partake of the results of their industry and skill. Can any man produce even a tenth of what he needs to support the conditions of the life into which he is born? As it is impossible to reproduce the environment even of the gen-

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or are innate. . . . Every man in a civilized state inherits a status of rights which form the basis and stay of his civil existence. These rights are often called 'natural.' In truth, they are the product of the struggles of thousands of generations. Men, before they were capable of reflection or had developed science, had but one process for learning: that was by trial and failure. They paid with their blood the penalty of all their mistakes, and the price of all their experiments which failed. Our inheritance of established rights is the harvested product of the few successful experiments out of thousands which failed."—W. G. Sumner, *North Amer. Rev.*, June, 1884, p. 575.

eration immediately preceding, much less of the early generations, it is absurd to talk of beginning where the race began, and of repeating its experiences. We could not do this if we would, we should not if we could.

The law of progress in knowledge conforms to the general law above formulated. If we distinguish second-hand, or capitalized, knowledge, from knowledge that is gained by original discovery, or by rediscovery, and designate the former by the symbol C, and the latter by the symbol D, the general law of the "genesis of knowledge in the race" will take this form: D; C (D)+D; C (2D)+D; C (3D)+D; C (4D)+D. In the acquisition of knowledge, is it possible for the individual to begin where the race began and to proceed as the race proceeded? He cannot begin where the race began, for it is not possible to reproduce the environment of the nascent race; but if we conceive the race composed of successive generations, the individual may gain his knowledge according to the same general mode by which the race acquired its knowledge. No given generation can acquire by original discovery, nor by rediscovery, all the knowledge needed for its use; but it must accept certain portions of the knowledge accumulated by preceding generations at second-hand or on trust, and to this add such knowledge as it may gain by its own independent activity. The individual must follow the same general course. Much of the knowledge that he needs for his guidance he cannot learn at all, so difficult of attainment is it, and so engrossing are the special activities involved in the support of daily life. Here, as before, the division of labor involves one form of inheritance. If the food we eat or the water we drink needs to be analyzed, we beg, or borrow, or buy the knowledge and skill of an expert.

In other words, there is knowledge absolutely necessary on occasion that we cannot afford to acquire at all. In all such cases we submit to the guidance of others; we walk by faith when we cannot walk by sight.

But leaving out of account this special and peculiar knowledge, it is only a small part of what we need to know that we can acquire by original discovery, or even rediscovery. There is knowledge that must be gained at second-hand, if gained at all. Mr. Spencer is very consistent in discrediting the value of historical knowledge, for, as he interprets the "genesis of knowledge in the race," its acquisition would be impossible. All such knowledge is absolutely inaccessible by direct means; but there are other kinds of knowledge necessary for guidance and culture that are relatively inaccessible by direct means, such as geographical, scientific, theological, etc. Must the individual construct his own almanac? Must he forego his newspaper and gazetteer, and depend for news on what he can discover by travel? On what principle may he read "Education," and "Social Statics," and "Principles of Psychology," if Mr. Spencer's interpretation of the "genesis of knowledge in the race" is correct? But some one who is more anxious to defend a theory than to acknowledge the force of plain facts will say: "This is not knowledge, but information; we know only what has the sanction of our personal experience." Then there is no such thing as historical or theological knowledge. We do not *know* that Moses and Cæsar and Napoleon and Washington once lived, or that certain divine laws are binding on human conduct. And so we who have not travelled do not *know* that there are such cities as London and Paris and Rome. Do we know our own names, and the names of our parents and

intimate friends, and of the place where we live, and of our country? In the last analysis our knowledge of these things rests only on tradition; our "firm belief of what is true" in all such matters does not rest at all on the ground of personal experience. Is this knowledge or information?

It is said, in defence of this distinction, that we are liable to deception in whatever does not fall under our personal observation; and hence that, outside of the domain of our own experience, we cannot be said to *know*. Shall we refuse to call the current coin of the day *money* because we are now and then in possession of a counterfeit piece, or because we did not actually make the coin that passes through our hands? Besides, we are liable to deception even within the domain of our own proper experience.

The dogma that learning should be a process of discovery, or of rediscovery, carries with it the assumption that nothing is real knowledge unless it has the sanction of the learner's personal experience. This theory denies that there is such a thing as second-hand *knowledge;* it is only *information* or *belief*. For example, if I see a house burn, I have acquired an item of real knowledge, for my own senses have been impressed with an actual occurrence; but when I have related to a reporter what I saw, what was *knowledge* to me has become only *information* to him; and when the reader, a thousand miles away, has perused the reporter's account, he stands related to the transaction in the third degree, and is by so much the less entitled to say that he *knows* a house burned at a stated time; the most that he can say is that he *believes* such a thing occurred; he has only *information* on this point.

The reader will at once discover the bearing of this distinction. Learning, it is agreed, should consist in the acquisition of knowledge; but as knowledge is a mental state, induced by acts of reflection or of observation, language can by no possibility be the source of knowledge, and books serve no other purpose in real learning than to facilitate the gaining of actual experience.

For example, a book contains the statement that a given volume of carbonic acid is composed of one volume of carbon vapor and two volumes of oxygen.

This statement is not knowledge, for it rests only on authority; but it may be converted into knowledge by being actually verified by the reader; he must actually rediscover the composition of carbonic acid, in order that he may attain real knowledge; and the only value of the book consists in pointing out the right track to follow. This, in brief, is the theory of knowledge made necessary by Mr. Spencer's theory of education.

When generalized, this theory amounts to this: *We know only what we have observed.* The term observed is used in its widest sense, as including observation proper and reflection; we may know subjective as well as objective phenomena. By the light of this theory, let us note what we know and what we do not know. Of course we shall be obliged to transfer many items of supposed knowledge to the category of beliefs. The first consequence of the theory is that we can have no knowledge of anything outside the sphere of our own observation. We know nothing that occurred prior to our birth; we do not even know that anything *did* occur prior to that period. Worse still, we do not know that that particular event itself ever occurred, nor do we know that we shall die. For the knowledge of this fact we must

wait till we have had this experience, and then, of course, it is too late to serve our purpose. We do not even know our own names, nor the names of our friends. If we impose names on our children, we might be supposed to know *their* names, but only on the hypothesis that we know that such and such beings are really our children—a thing that is virtually impossible by the terms of the new theory. This statement may need illustration.

J. S. Mill remarks: "What we are said to observe is usually a component result, of which one tenth may be observation and the remaining nine tenths inference." * In illustration of this statement he says: "I affirm that I saw my brother at a certain hour this morning. If any proposition concerning a matter of fact could be commonly said to be known by the direct testimony of the senses, this surely would be so. The truth, however, is far otherwise. I only saw a certain colored surface; or, rather, I had the kind of visual impressions which are usually produced by a colored surface; and, from these as marks, known to be such by previous experience, I concluded that I saw my brother. I might have had sensations precisely similar, when my brother was not there." Still further to eliminate the element of inference from supposed observation, let us take another simple case. We are told, or we read, that a certain object weighs a thousand pounds. Our theory requires us to reject this as knowledge, and so we verify the statement by placing the object in the scales and adjusting the balance. Then our belief is converted into knowledge. Not so fast. Our knowledge, we must recollect, is measured by what we have *observed.* The only essential fact we have observed in this case is that when the balance

* "Logic" (New York, 1867), p. 384.

is struck the weight stands at the mark "1000." Our hasty conclusion involves two very large assumptions: (1) that the weight is accurate, and (2) that the levers of the scales are accurately adjusted. We know neither of these things by our own observation. We might measure the levers and test the weight, but both these processes would require a *standard*, and how can we vouch for the accuracy of the standards? In this, as in thousands of analogous cases, we are finally confronted with mere authority, and beyond this we are powerless to go.

The reader will observe that by the terms of this theory of knowledge we cannot affirm that we know the name of any of the countless objects that surround us, save, of course, those objects on which we may have imposed a name. It need not be said that there can be no such thing as geographical knowledge, save within the little sphere of one's own observations, and even within this sphere we cannot affirm that we know the name of a single object, for all name-giving in this realm transcends our experience. In science, the situation is nearly as bad, for inference constitutes even more than nine tenths of scientific procedure, and, in what is called experimental research, there is the implication of authority at every step. On the hypothesis we are now discussing, astronomical and chemical *knowledge* would be nearly out of the question for the great mass of mankind. Really to *know* that an eclipse will occur is a simple impossibility, for who can *observe* what *is to be?* The past and the future are both unknowable. In fact, this assumed theory of knowledge ends in an almost absolute agnosticism, and reduces the field of learning to the narrow dimensions that fall within the sphere of the animal intelligence.

In what has preceded, I have merely noted some of the more obvious implications of the new philosophy; I have simply extended this latest theory of knowledge to its logical consequences. Of course, these consequences are repugnant to the common-sense of mankind, and were certain theorists to be confronted with them in the form here stated, they would doubtless attempt to save their thesis by resorting to verbal legerdemain.

Let us now turn from these dreamy absurdities to a conception of knowledge that is consonant with common-sense, and that makes possible a field of learning worthy of human intelligence.

"Knowledge," says Whately, "implies three things: (1) *Firm Belief*, (2) of what is *true*, (3) on sufficient *grounds*." * Knowledge and belief, then, do not belong to different categories, as the new theory assumes, but knowledge is merely belief of a certain degree. "A low degree (of belief) is termed presumption; a higher degree, probability; and the highest possible degree is termed certainty. When the mind is in that state denominated certainty, we are generally said to *know* the thing to which this very strong belief relates" (Upham). The grounds of this belief are consciousness, the senses, testimony, memory, inference. The new theory denies that knowledge can result from testimony, oral or written. "Without a general confidence in what men assert, every one's knowledge of events and facts would be limited to those only to which he himself had been a personal witness. In this case no American, who had not been a traveller, could believe that there was such a city as London; . . . and no person whatever has any ground for believing that such men as Hannibal and Cæsar have

* "Logic," iv., 2.

ever existed. With the great mass of mankind the exclusion of testimony as a ground of belief would be the means of depriving them of the greater part of what they now know" (Upham *). This conception of knowledge is wholly at variance with the assumption that each individual, in the attainment of his knowledge, must lapse into a state of modified barbarism.

There *is* historical, geographical, and astronomical knowledge; we do know our names, the fact of our birth, and the certainty of death. Books are neither necessary evils nor simple conveniences, but are the universal and indispensable means whereby knowledge is gained on the ground of human testimony. Books extend the range of mental vision, just as the telescope is a virtual extension of bodily vision.

The theory that knowledge cannot be capitalized has been stated in this wise:

Knowledge is a mental state.
Mental states cannot be transmitted.
Knowledge cannot be transmitted.

We might offset this syllogism with another:

There has been progress in knowledge from age to age.
Progress implies transmission.
Knowledge has been transmitted.

A little reflection will show that the fallacy in the first statement lurks in the term *transmit*. Substitute *reproduce* for *transmit* and the absurdity of the conclusion becomes apparent. Mental states cannot only be reproduced in successive generations of minds by the presence of similar excitations, but these reproductions may occur through the stimulus of symbols. The objects *a*, *b*, and

* "Elements of Mental Philosophy" (Boston, 1883), p. 126.

c produce a certain mental state in A; can a similar mental state be induced in the mind of B without the presence of these objects? Certainly. Certain persons witnessed the killing of Cæsar by Brutus; they therefore *knew* the fact. But we also know this fact, not immediately, as witnesses through sense-stimulation, but mediately, by the reproduction of a certain mental state through symbol-stimulation. Any composite notion may be reproduced through this secondary form of stimulation, provided the ultimate elements of this notion have once been in consciousness. A melody of Beethoven may not only be reproduced upon an instrument from the printed notes, but the mere perusal of these notes will provoke a harmony in the mind of the musical reader. A musical education that should proceed on the theory held by Condillac and Spencer would be a very curious affair.

The importance of reaching right conclusions on the nature of knowledge and of the knowing process becomes evident when we consider the fact that attempts are being made to conduct schools on the new hypothesis, and at the same time there is a loud impeachment of the education that is conducted on the older hypothesis. The mistakes that are made in practice by thoughtful men inevitably have their source in theoretical errors.

The latest educational philosophy as to the office of books is exhibited in the following quotation: "It is sometimes said that books contain the treasured wisdom of the past, and that there can be no progress among men unless each generation in its turn builds on the structures of those who have built before. Wisdom exists nowhere outside of some mind that is wise. It is not a thing to be transmitted as material wealth is trans-

mitted. Every man who becomes wise must make himself wise by the activity of his own mental powers, and when he dies his wisdom must go with him. It is true that if he is fortunate enough he may leave some expressions of his wisdom behind, but these expressions are to be interpreted, and they can be interpreted, by those only who are able to think the same thoughts and to know the same knowledge by an independent activity of their own minds." *

The truth, as I understand it, is expressed in the following quotations from Dr. Reid and Dugald Stewart: "General propositions in science may be compared to the seed of a plant, which, according to some philosophers, has not only the whole future plant involved within it, but the seeds of that plant, and the plants that shall spring from them through all future generations.

"But the similitude falls short in this respect, that time and accidents, not in our power, must concur to disclose the contents of the seed, and bring them into our view; whereas the contents of a general proposition may be brought forth, ripened, and exposed to view at our pleasure, and in an instant.

"Thus the wisdom of ages, and the most sublime treasures of science, may be laid up, like an Iliad, in a nutshell, and transmitted to future generations. And this noble purpose of language can only be accomplished by means of general words annexed to the divisions and subdivisions of things." †

"The foundation of all human knowledge must be laid in the examination of particular objects and particular

* John W. Dickinson, *op. cit.*, p. 17.

† Thomas Reid, *op. cit.*, p. 319.

facts; and it is only so far as our general principles are resolvable into these primary elements that they possess either truth or utility. It must not, however, be understood to be implied in this conclusion that all our knowledge must ultimately rest on our own proper experience. If this were the case, the progress of science, and the progress of human improvement, must have been wonderfully retarded; for, if it had been necessary for each individual to form a classification of objects, in consequence of observations and abstractions of his own, and to infer from the actual examination of particular facts the general truths on which his conduct proceeds, human affairs would at this day remain nearly in the same state to which they were brought by the experience of the first generation.

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"In a cultivated society, one of the first acquisitions which children make is the use of language; by means of which they are familiarized from their earliest years to the consideration of classes of objects and of general truths; and, before the time of life at which the savage is possessed of the knowledge necessary for his own preservation, are enabled to appropriate to themselves the accumulated discoveries of ages.

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"Indeed, among those who enjoy the advantages of early instruction, some of the most remote and wonderful conclusions of the human intellect are, even in infancy, as completely familiarized to the mind as the most obvious phenomena which the material world exhibits to their senses."*

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* Dugald Stewart, *op. cit.*, pp. 116, 117.

This thought has been more concisely expressed by J. S. Mill: "Language is the depository of the accumulated experience to which all former ages have contributed, and which is the inheritance of all yet to come." *

* "Logic," p. 413.

CHAPTER VI.

THE MODE OF EDUCATIONAL PROGRESS.

WHATEVER special interest attaches itself to this theme is doubtless due to the fact that men of equal honesty and earnestness are divided in opinion as to the normal mode of educational progress, and more particularly as to the present status of the teaching art. On one side the claim has been set up that the whole existing order of things in education, at least on its practical side, is almost hopelessly bad; and that the case is so desperate as to justify an immediate revolution. When it is inquired what the new order of things is to be, what its marks are, what it is like, it is stated in reply that it is impossible to give any exact definition of the new era, but that its coming is imminent, and that when it *does* come it will be a very glorious thing. The conception seems to be that there is to occur a rather sudden winding up of the present order of things, and that the educational millennium is immediately to follow, with somewhat of the suddenness of an earthquake shock. Some confusion attends this conception, from the declaration that the "new education" has had a real existence from very remote times, and that all the great names in educational history from Socrates downwards have been prophets of the new gospel. This paradox will disappear, we may presume, by assuming that the voices of these great men were unheeded, that their doctrines had no appreciable effect on

the current of educational thought, and that their interpreters have only just appeared.*

Opposed to this glowing assumption of an approaching millennium in educational practice, there is the conviction on the part of very many that the dissolution of the existing order of things is not imminent; that thus far the history of education has shown only continuity of growth; that the future is doubtless to exhibit a continuous series of changes for the better; but that this better future is to be an evolution out of a good past. These men believe that the main lines of educational theory have been pretty firmly and correctly established, and that the most hopeful and fruitful field of effort is that of extending and co-ordinating these lines of thinking. It is believed to be unwise and unnecessary to break with the past; that not only is substantial progress

* "No one can tell what the so-called New Education really is, from the very fact that many if not most of its principles and resulting methods have yet to be discovered. We stand on the border-land of discovery in education.

"If it is impossible to present any adequate idea of the New Education, the position of its disciples may be easily defined. *They believe that there is an immense margin between the known and the unknown in education.* The unbelievers, on the other hand, hold that, with some possible exceptions, the march of progress in education has closed with them.

"The followers of the New Education count in their ranks every great thinker and writer upon education from Socrates to Horace Mann. . . .

"The stationary followers of the Old Education have an ideal they can easily reach, and, having done so, the smile of perfect pedantic satisfaction freezes up on their faces, a striking manifestation of the utter complacency to be found in limited ideals." — From Francis W. Parker's preface to the American edition of Tate's "Philosophy of Education," pp. v., vi.

entirely compatible with the conservative tendency, but that any other mode of progress is an illusion, full of danger.

We thus have two schools of educational thinkers, so sharply defined as to be in some sort antagonistic. It is charged against the leaders of the so-called reform party that they claim a proprietary right in the rubric "New Education" as a sort of trade-mark, and that their enthusiasm has a certain commercial aspect that is not prepossessing. *Per contra*, it is alleged that the representative adherents of the *status quo* are blind leaders of the blind; that, conscious of their inability to endure the light of the coming glory, they would protract the era of darkness; and that when they do not speak reverently of the "New Education," they are moved by envy.

These rivalries, it must be confessed, are not altogether pleasant; but let us find some consolation and even encouragement in the fact that we are now fairly entering upon the second of the three stages of opinion noted by Mr. Spencer* as "the unanimity of the ignorant, the disagreement of the inquiring, and the unanimity of the wise." If we are ever to attain to this third state, "the unanimity of the wise," we must needs pass through this intermediate state of disagreement. "It is sometimes necessary to fight," says Aristotle, "but all to the end that we may have peace." It is the part of wisdom, doubtless, to abridge as much as possible this necessary period of dissent, and it is this thought that dictates the matter and the method of this discussion.

As a constitutional aid towards harmonizing these two conflicting phases of opinion that have been noted, let

* "Education," p. 101.

us bear in mind that this divergence of opinion is due, in part, at least, to differences in mental constitution. There are but few minds in which the reflective and the emotional elements are in a state of equipoise; and a marked preponderance of either element entails a weakness of disproportion. An excess of feeling leads to great energy of movement, but it is usually accompanied by a marked defect in the power of clear insight; there is superabundant force, but it is ever prone to play antics through lack of rational direction. On the other hand, disproportion on the side of the reflective habit almost inevitably entails some slowness of motion and an indisposition to move out of beaten tracks.* Here we have an instance of a very common form of the division of labor. But few men, it seems, are constructed on so catholic a plan that they embody at once great motive power and superior ability in the line of clear thinking. In my boyhood I recollect it was a question of serious debate whether it was the ball or the powder that killed the bird; and we find men stoutly affirming, some, that the world is moved and governed by ideas, and others, that sentiment is the universal motor. I now incline to the opinion that it requires the joint effect of powder and ball to kill the bird. Lest I lose myself in what may prove to be a digression, let me make haste to say that in educational reform the thinker and the enthusiast both have their uses, and that neither should feel a contempt for the endowment he does not chance to have. A man who does a good quality of thinking may count

* "Reflective men do not change; they become transformed. Ardent men, on the contrary, change; they are not transformed." —Renan, "Les Apôtres," p. 183.

himself a useful member of the profession, for his ideas, sooner or later, will be put in motion by some one who has a surplus endowment of sentiment. The great danger of the man overstocked with sentiment is that he is often indiscriminating in the selection of ideas which he is to convert into mobiles. Rousseau put some very fine and hence very powerful sentiment back of some very foolish and even very false ideas; and though a century has passed since his day, these false notions are still moving briskly on their errands of mischief. At this point, loyalty to the law of the division of labor is the saving clause.

I now turn to the main purpose of this chapter, which is to discuss the normal mode of progress in education, to trace the main lines of educational thought thus far, and to determine, with some degree of probability, what may be expected of the future.

The law of progress has already been stated in these terms: *inheritance supplemented by individual acquisition.* We shall best conceive the mode of progress in general if we think of the human race as composed of a series or succession of generations, each of which receives from its predecessor the net results of its toils and thought, adds to this inheritance the fruits of its own industry and economy, and finally transmits the aggregate to its successor. The labor of these successive generations is not the labor of Sisyphus, but each starts on the upward march at the point where its predecessor stopped, and thence lifts the weight to a still higher level.

Let it be noted that no individual can renounce the inheritance into which he is born. That relapse to a state of nature which Rousseau and his disciples so ardently and so eloquently long for is a thing not only

impossible, but even inconceivable. What are some of the items of this inalienable inheritance? A purified atmosphere, protection to life and property, a longer average term of life, the division of labor, means of rapid communication, language, with its ready-made distinctions and classifications, and, subtler still, enlarged capacities of mental insight and acquisition, and innate predispositions amounting to inherited habits. Who can refuse such legacies, if he would? Who is there that would renounce them, if he could? Who can abide the philosophy that recommends a perennial relapse towards barbarism?

One element of this inheritance has such a direct and important bearing on the main question in this discussion that I must give it a moment's notice. Language, with its ready-made abstractions, generalizations, and distinctions, is just as truly a part of the child's natural environment as climate, atmosphere, soil, and landscape; and the truths formulated in language are objects of study just as *natural* and legitimate as plants and rocks and animals; and, still more, speaking generally, these formulated truths are just as easy of apprehension as the physical phenomena that constitute a part of the child's environment. The apprehension of formulated truth commences the moment the child begins to interpret language, and proceeds, *pari passu*, with his apprehension of physical phenomena. I know nothing more unfounded in fact and philosophy than the current assumption that it is easier for a child to apprehend thunder and rain, or even flowers and butterflies, than the bits of household wisdom that penetrate his mind through the medium of language. If it is so easy and natural for the mind to analyze and comprehend concrete presentations, how are

we to account for the slow progress of physical science? If it is so very difficult to comprehend abstract truths, how are we to account for the early cultivation of grammar, mathematics, and ethics? For the farmer, the perfected reaper and the formulated truths of agricultural chemistry are all simple facts of inheritance; and he may as reasonably be required to reinvent the reaper as to rediscover the science. In both cases the obligation is to accept, to use, and, if possible, to improve. There is no more obligation to repeat the experiences of the race in alchemy and astrology than in the use of the sickle and the cradle.

Of individual acquisitions, or the second element in progress, four things are to be noted: (1) If the major and mighty task of each generation is rediscovery, the opportunity for discovery is made almost infinitely small; (2) the prerequisite to invention, improvement, and reforms is a knowledge of what has come to us in the way of inheritance; (3) to only a few men in a century is it granted to make absolute additions to the world's stock of knowledge; (4) for the most part, the task of the thinker is to extend old lines of thinking, to detect in established general truths their more occult implications, and to collate and co-ordinate the *disjecta membra* of possible systems of truth.

If one is to set up as an innovator, or even as a reformer, he has no claim to a moment's consideration unless he has ascertained what has already been done in his proposed line of improvement, and has also mastered the general principles on which his invention rests. I shall not soon forget the loss of time and patience entailed by the persistence of an enthusiastic youth who had invented a machine that would surely run till it was worn out.

He had all the positiveness and intolerance of ignorance. A month's study of mechanics, or, perhaps, a day's visit to one of the museums of the Patent Office, would have saved him from the mortification of failure and from the loss of his patrimony; but his ignorance made him the easy victim of his glowing enthusiasm. At the present rate of acquaintance with the history and the science of education, it is still possible, as the record shows, to invent school supervision and the word-method of teaching children to read.

"Great minds," says Richter, "speak to us from the vantage-ground of centuries." The immortality of certain books lies in the fact that they anticipate the thinking of a remote future. They trace in faint outline the course which human thought is to traverse through the coming centuries, and all subsequent thinking is but the fulfilment of these ancient prophecies. I am sure I do not overstate the fact when I say that the best thought of the best thinkers, through all the past centuries, has been devoted, directly or indirectly, to the problems of education, and that there is not a single phase of this problem which has not been subjected to the test of experience. The Bibles of all ancient peoples have been text-books for ethical instruction, and contain, by implication, a body of educational doctrine. I believe it to be a comparatively easy task, by a process of legitimate interpretation, to construct a sound and sufficient body of educational truth from the Christian Scriptures. Socrates, Plato, and Aristotle, while writing on ethics and politics, were compelled to discuss the question of education, and their statements were so comprehensive that they anticipated many of our modern theories and methods. In making these statements, the truth I am trying

to impress is this: there is no probability whatever that there is to be such a sudden and glorious dawn of discovery as the "New Education" presumes to advertise.

M. Compayré has, with rare critical insight, made a masterly survey of the history of educational doctrines and methods, and I borrow this quotation in confirmation of the position just taken: "The desirable thing just now is not so much to find new ideas as properly to comprehend those which are already current; to choose from among them, and, a choice once having been made, to make a resolute effort to apply them to use. When we consider with impartiality all that has been conceived or practised previous to the nineteenth century, or when we see clearly what our predecessors have left us to do in the way of consequences to deduce, of incomplete or obscure ideas to generalize or to illustrate, and, especially, of opposing tendencies to reconcile, we may well inquire what they have really left us to discover. . . . In truth, for him who has an exact knowledge of the educators of past centuries, the work of constructing a system of education is more than half done. It remains only to coordinate the scattered truths which have been collected from their works, by assimilating them through personal reflection, and by making them fruitful through psychological analysis and moral faith." *

One element in human nature is an upward tendency in the line of growth; and civilization is but the actual outcome of this instinct on a vast scale. The growth of an individual in stature and the growth of the race in knowledge and refinement are analogous facts. In both cases growth is predetermined; it is a law binding on the individual and on the race as a whole. Much light will

* Compayré, *op. cit.*, pp. xviii., xix.

be thrown on these "great expectations" by observing the actual modes of growth which constitute progress. "Progress," says the "Dictionnaire de Pédagogie," "is not a force that acts spasmodically, but is a logical and graduated evolution, in which the idea of to-day is connected with that of yesterday, as the latter is to a still more remote past." * This is a fair statement of the *ideal* mode of progress, but the historical or actual mode is very different. Instead of continuity, symmetry, and moderation, the outgrowths of reason and reflection, we see the overwrought, the unsymmetrical, and the spasmodic, the result of impulse and sentiment. A strong feeling starts a movement, the rising fervor gives it a growing momentum, and then it proceeds quite independent of rhythm, rhyme, or reason. But, finally, a counter sentiment is engendered, a recoil movement is begun, and the old exaggeration gives place to a new one.† A common characteristic of these impulsive movements is that they are blind. Not only is the objective point seen as through a sunset-mist, but this point is not discerned in relation to others of co-ordinate rank, and most often no others are seen at all. The mind of the enthusiast is lacking both in clearness and perspective; it seems that the very condition of feeling intensely is to see obscurely, or, at least, confusedly. The mind that does not discriminate cannot deliberate. It is usually asserted that the normal stimulant to activity is a feeling either of pleasure or of pain. It would be better to call this the natural stimulant. The animal, so far as

* "Iere Partie," p. 1436.

† "The suppression of every error is commonly followed by a temporary ascendency of the contrary one."—Spencer, "Education," p. 102.

we know, is moved to activity only by some strong feeling, and the same thing is true of the savage and the infant; but the chief ingredient in the motive that governs the sage is intellectual. With reference to civilized man, motive is composed of two elements, thought and feeling; and, in the ascent towards the highest type of development, the thought element attains a rising domination, while the element of mere feeling loses its domination in the same ratio.* This statement refers to the man as determining his own conduct. When his purpose is to determine the conduct of others, he will appeal to the element that is supposed to have the greater domination; to feeling, if he is addressing a mob, but to the intellect, if he is addressing men capable of deliberation. Now the truth I wish to insist on is this: if progress is to be continuous, symmetrical, and sure, it must be based on motives of the reflective type.† The men who direct

* "Motives are the intellectual reasons which cause us to act in such or such a manner, such as thoughts, considerations of the mind. Mobiles, on the contrary, are movements of the heart, the affections, the passions. For example, maternal love is a mobile, but the calculations of interest and the considerations of dignity are motives."—Marion, *op. cit.*, p. 127.

† "We do not desire to create mere enthusiasts. Undirected and uncontrolled enthusiasm burns out, and leaves only ashes behind. The genuine enthusiast always subjects himself to law if his work is to be effective and permanent. The fiery heat of the sun itself attains its ends in the domain of nature by working according to the law of each kind. Where it does not do this it destroys. So with the fire of the educational enthusiast. We desire to see the ardor of the youthful schoolmaster so founded on principle and controlled by intellectual purpose that it will last a lifetime; and this is possible only by timely subjection to the order and law which philosophy alone can give."—Laurie, "The Training of Teachers" (London, 1882), p. 68.

such progress must discern clearly, and must then appeal to the discernment of others. While saying this, I am distinctly conscious that, in dealing with men, we must take them as they are; that if we are to move them, we must appeal to the motive that is in the ascendant, and must use that form of power which we chance to possess. My purpose is to point out the evil consequences of addressing the feelings rather than the reason, and to indicate the desirableness of walking by the light of reason rather than by the *ignis fatuus* of feeling. Most reforms are, doubtless, of emotional origin, but their final support is reason; they are saved by the potency of ideas. It were better, it seems to me, if reforms were to have their origin, continuance, and consummation in reason. As we listen to the fervid exhortations of the reformer, we may have almost absolute assurance of three things: (1) He is leading us away from some substantial truth that has been allowed to trespass on other and related truths; (2) he is leading us towards another truth which is greatly exaggerated because seen through the mists of feeling; (3) these promises must be subjected to the reductions of reflection and cool common-sense before they can have a substantial value. If any proof were needed of the sheer extravagances of the educational reformer, it might be found in such declarations as these: "I have turned the European car of progress quite round," said Pestalozzi, "and have set it going in a new direction." How charming is such simplicity and assurance! The course of European civilization had been wholly wrong till Pestalozzi's day, and he, in his own might, had reversed the march of that civilization! The philosophers, moralists, teachers, and statesmen, previous to his time, had been

radically wrong. In the fulness of time he had come to set the world right!

Rousseau's favorite injunction was: "Take the road directly opposite to that which is in use, and you will almost always do right." Here the presumption is the same as before; the world had fallen into a very bad way. Rousseau was the first one to discover the fact, or, at least, the first who had the wisdom to point out the right way! I maintain that the mind which can believe that the whole existing order of things is wrong, and would counsel a revolution in favor of his own ideas, is essentially unsound and untrustworthy; for it is not even conceivable that a line of policy which has had the long sanction of the wise and good is wholly or even mainly wrong. It is only presumption and ignorance and unbridled sentiment that can go to such lengths.

A Greek proverb says that "a mob has no brains," and we shall form no mean conception of education if we define its purpose to be the disintegration of mobs; the thought being that each individual should have a brain of his own, to the end that he may reason and reflect and so be in a condition to act for himself, instead of moving with the herd at the dictation of a self-constituted leader. It seems to me discreditable to the teaching class that educational epidemics are so easy to start, that they occur so often, and that their victims are so numerous. In these phenomena there is something of the regularity of law. We cannot, indeed, predict what the next craze will be, but we may be sure that a new one will follow the termination of the one now in progress, that it will leave many remainders of debility and some of strength, and that those who survive the distemper will marvel at their credulousness. What I aim

at saying is that this prevalence of hobbies bespeaks unsoundness in the body of the teaching profession, and that the only radical cure for this intellectual distemper is the habit of treating educational questions with judicial calmness and fairness.

In the next place, the course of my argument leads me to notice the main phases of the educational problem that have been developed by the thinkers of the past, to the end that we may form some reasonable conjecture as to the probability of lighting on essentially new phases of the problem. If but little has been discovered, the field of exploration is large and full of promise; but if the process of discovery has been long-continued and thorough, if the discoverers themselves have been men of pre-eminent ability, and if this exploration has been in any sense complete, then the hope of a new era in education is visionary. If a seafaring man were to attempt to enlist adventurers for the discovery of a new continent in the Pacific, no matter how fervid his eloquence, or how boisterous his appeals, he would find no following among the well-informed. The continents have been discovered; it only remains to occupy them and to improve them.

To make this inquiry eminently fair, let us consider education in its most comprehensive sense, and define its purpose to be to fit the human being for complete living. For a man to live completely is to fulfill perfectly all the functions that can reasonably be demanded of him. A man owes duties to himself, to his family, to society, to the state, to the race, and to his Creator; and to fulfil these duties he needs physical, intellectual, and moral power, and instrumental knowledge adapted to the requirements of each class of demands. We may simplify

this statement by saying that the ideal education requires the most complete development of the body and of the mind, liberal supplies of knowledge for use, and, finally, a concentration of these powers on specific lines of activity. We now wish to know what phases of this complex problem the education of the past has left untouched, so that we may discover what remains for the "New Education" to undertake. The problem of physical training was solved in ancient Greece, and so perfectly that any improvement on it is manifestly hopeless. All that moderns can do is to imitate it. Specific physical training in the line of handicrafts and trades was a prominent element in the education of the ancient Jews. Sparta and Rome educated their citizens for military service. The highest conceivable type of intellectual training, the purpose of which was to make the mind the perfect instrument of thought, was methodically discussed by Plato, and exemplified by Socrates. The commercial value of knowledge was emphasized by the Phœnicians and the Egyptians. Education for the civil service was and now is the hobby of the Chinese. Education in view of the future life was the preoccupation of the ancient Jews; and ethical training was a characteristic of all ancient systems of education. Education for culture was exemplified in Greece, and education for practical ends in Rome; and those two lines of thought are now running side by side in every college and even in every high-school. We see compulsory education in fact among the Jews, and in theory in Plato's "Republic." The duty of the state to administer education was emphatically declared by Aristotle; it was to be public, and common to all. Twenty-three centuries before the "New Departure in the Common Schools of Quincy," the appoint-

ment of a superintendent of schools was recommended by Aristotle.*

Object-teaching is as old as the burning bush and brazen serpent, and the highest type of it was exemplified in the teaching of Christ. The instruction of children by means of games was known and practised by the ancient Egyptians. Paul knew and stated the characteristic difference between the child and man as to the comprehension of truth. The doctrine that true education is a process of unfolding from within outwards, that science cannot be taught, but only drawn out, was taught and practised by Socrates. The conception of education as a growth is embodied in David's First Psalm, and appears and reappears throughout the New Testament. The instrumental value of knowledge has never been more forcibly expressed than by the author of Ecclesiastes.† Oral instruction *versus* text-book instruction was a controverted question in Plato's time; and in his decision, Plato was as profoundly wrong as some moderns who have decided the question.‡ This statement falls far short of a *catalogue raisonné* such as might be made without great labor; but though it is restricted to the ancient period, I submit that it establishes a very strong improbability that any startling truth, such as the "New Education" promises, remains to be discovered; and this improbability becomes almost absolute when we include the developments of educational doctrine that have been made during the last eighteen Christian centuries. In general, I despise alliterations, and particularly when they are invented to give currency to educational cant and

* "Politics," *op. cit.*, p. 230. † Ecclesiastes x., 10.

‡ "Phaedrus," 274–278. See also Lewes, "Biog. Hist. of Philosophy," pp. 197–199.

error; but the truth, as I see it, may best be expressed in these terms: educational truth of undoubted value is not likely to be new; and what is brand new in education is not likely to be true. Of course, I make this statement with reference to doctrines and principles. But some one will ask on what ground is it that the discovery of new truth is not as probable in education as in physical science. Two things may be said in reply: (1) The discoveries in science do not consist for the most part in principles and laws, but rather in applications and extensions; it is this line of discovery that is always imminent in education. (2) Besides, the human mind, the great constant in education, has been a subject of study, just as accessible to the ancient as to the modern. Every man, in fact, carries about with him in his consciousness the material of educational study, and it is for this reason that the improbability of essentially new discoveries is so much greater in education than in physical science. Other constants are the relation of man to man, and of man to his Creator. Is it probable that these relations are liable to any radical change? If not, the probability of new discovery is cut off in this field. The relations of man to the state have not been so constant, and, in consequence, the conception of education has varied through the centuries; but what probability is there that any new type of such variation is to be developed in the future?

What shall we say of man's duties to himself? Is there any probability of a radical change in this direction? Next to the relations of man to his Maker, the relations of man to himself seem to me to form the chief constant in education. Man is counted as a gregarious animal; but he might be most characteristically described

as the solitary being. Self-consciousness perforce makes him such; though living in society, man communes constantly and chiefly with himself; and save one, education has no higher or holier purpose than to fit man to be his own companion. Our reformers need to be reminded that the young should be taught to *be* as well as to *do*, which is now regarded as the principal thing. My purpose in making reference to this phase of the educational problem is to point out the fact that the striving after the ideal man is virtually a constant in education, and that there is no probability that there is to be any abrupt change in this conception. What is to follow is virtually what has been.

The types of education that have come down to us from the ancient world may be designated as follows: the intellectual, the ethical, the religious, the practical, the political, the contemplative, the liberal. The general style of education has always responded to the dominant conception of man's destiny. When this conception has been partial, or narrow, education has likewise been narrow; and when this conception has been broad, the education has been liberal. The fact I wish to state is that these types are exhaustive, or, at any rate, are so comprehensive that it is wholly improbable that there can ever be an education into which several of these types do not enter as factors. That there should be an essentially new education, one of two things, speaking generally, would be necessary: either a radical change in the constitution of human nature, or a radical change in human destiny; or, what would amount to the same thing, a discovery that the present conception of human nature is a mistake. A mere modification of either of these conditions would entail only a modification of the existing education; but

an essentially *new* education would require a substitute for one of these existing sets of conditions.

I am aware that a pretence has latterly been set up that such a change in conditions has actually taken place, in the shape of a revised conception of what may be called child-mind. The dominant conception has been that the mind of the child and the mind of the adult are essentially the same; that from the one to the other there is complete continuity of growth; that the one becomes the other by a series of unconscious and indefinable transitions; that they are the very same in kind, differing only in relative development and power; in other words, that the child is a little man. The new conception is to the effect that the child-mind is a thing *sui generis*, peculiar in kind, structure, ability, and laws of growth. If this assumption be admitted, it follows that there may be a "new education" for children, based on the constitution of the being that up to this time has been wholly misunderstood. In respect of this assumption I would make the following observations:

1. *There are no analogies to support it.* In the vegetable world there is unbroken continuity, from the tender blade that has merely begun its growth up to the robust tree that has reached the term of its development. The mode of growth at any given instant is identical with the mode of growth at the next instant. There is, from first to last, a continuity of structure that is absolutely unbroken. There is no moment at which the plant *ceases* to be, and the tree *begins* to be; the plant and the tree are one.

In physical growth there is the same fact of absolute continuity in structure, and nutrition is administered by laws that act with absolute uniformity. There is not an

infant digestion as distinguished from adult digestion. Different kinds of food may be required in the two cases, but if digestion takes place at all, its mode is the same in both cases. If the claim were to be set up by some "new light" in physiology that we as yet know nothing of infant digestion, it would be a sufficient reply to say that, as we know much of adult digestion, we also know much, by implication, of the digestive process in infants. So far as the facts of nurture and growth are concerned, the infant and the man are one.

2. *The consensus of philosophic opinion supports the notion that there is but one psychology.* The classical writers on mental science, ancient and modern, discuss the phenomena of the intellectual life as constituting an organic unity; they make no attempt to classify these phenomena on the basis of age. The dominant conception of to-day is, that the beginnings of the various modes of mental activity are virtually simultaneous, but that their rates of development are unequal; that the organic modes of mental activity are the same for the child as for the man; that the constitutional difference in the two cases is one of relative power; and that the difference in products in the two cases is one of relative perfection. In other words, so far as the nature of mind is concerned, there is but one psychology and one logic. So far as they both conceive, or imagine, or reason, the child and the man are obedient to identical laws; and whatever difference may appear in the products of these several acts is due to unequal rates of work, or to different degrees of perfection.

3. *The supposed difference between child and man, as to mental constitution, has led to serious errors in practice.* In some instances instruction has been adminis-

tered on the hypothesis that the child's mind passes in regular succession from sensation to perception, from perception to conception, from conception to reasoning, etc., etc.; and that, while one of these modes of mental activity is in progress there is to be an exemption from all others. Such instruction is necessarily scrappy, discontinuous, and in the highest degree unnatural. The true conception is, that even in the child all these modes of mental activity are displayed simultaneously, and that the nurture should be catholic and wholesome. Another error consists in a systematic underrating of the child's ability, whereby instruction becomes so childish as to be trivial, trifling, and, to a bright pupil's mind, patronizing. To secure that degree of reaction which is necessary for real discipline, instruction must be pitched to a key somewhat above the plane of the child's spontaneous mental state. "Speak to the child two years old," says Richter, "as though he were six."* The teacher who regards her pupils as little men and little women, who makes real demands on their intelligence, and perhaps presumes somewhat on their ability, follows a truer psychology than one who minces and subdivides more than

* "Always employ a language some years in advance of the child (men of genius speak to us from the vantage-ground of centuries); speak to the one-year-old child as though he were two, and to him as though he were six; for the difference of progress diminishes in the inverse proportion of years. Let the teacher, especially he who is too much in the habit of attributing all learning to teaching, consider that the child already carries half his world, that of mind—the objects, for instance, of moral and metaphysical contemplation—already formed within him; and hence that language, being provided only with physical images, cannot give, but merely illumines, his mental conceptions." — "Levana" (Boston, 1874), pp. 347, 348.

is meet. In saying this, I do not forget the old error of indiscriminate diet; but I think the modern error is the more to be deplored. Strangely enough, some who make the most absolute distinction between children and men, as to mental constitution, demand that a child's conceptions shall be as definite and adequate as those of a more mature mind. The child, like the primitive race, lives in an atmosphere of delicious vagueness that inspires the poetic instinct. This is a clear instance of what we may call the child's *nature*. The conceptive power is high, and the discriminating power correspondingly low. During that period when a stick can be so easily transformed into an angel with blue eyes and golden hair, let us not demand a definition of geometrical figures, or even an accurate distinction in the meaning of common words.

4. *The main laws of mental life, for child as well as for man, have doubtless been discovered and formulated.* This probability rises almost to certainty, from the fact that mental phenomena appear in the consciousness of every thinking being, and that these phenomena have been studied by the highest intelligences of all ages. That there remains any real discovery yet to be made seems to me the most improbable of assumptions. In his recently published volume of essays, Mr. Bain expresses this thought: "I deem it quite possible to frame a practical science, applicable to the training of the intellect, that shall be precise and definite in a very considerable measure. The elements that make up our intellectual growth or acquisition are almost the best generalities of the human mind; even the most complicated studies can be analyzed into their components, partly by psychology, and partly by the higher logic. In a word, if we cannot make a science of education, so far as in-

tellect is concerned, we may abandon metaphysical study altogether." *

It will doubtless be said by some that there is hope for a revolution in education in the "new psychology" which is now promised. The old method of psychological study by introspection has had its day, it is said; and the new method, which proceeds by examination of results, or by the use of the scalpel and glass, is just making its appearance. I feel compelled to summarize what I think on this topic as follows:

1. Suppose that a curious piece of mechanism had been discovered by the earliest race of thinkers, but of such construction that its parts and mode of action could only be *observed*. Suppose, further, that this piece of mechanism had been passed from hand to hand, and had been made the object of long-continued study by the acutest thinkers of all ages down to the present, what degree of probability is there that any important fact or law of this piece of mechanism would escape this acute and secular examination? Is there even the possibility that either the mode of study or the general results of such an investigation can be discredited by any new method? This supposed case typifies, in all essential respects, the history of psychological investigation. Mental phenomena are just as real and just as obtrusive as physical phenomena, and the method of observation and induction has been applied as rigorously in the first case as in the second.

2. The method of verification by the study of products or results is very ancient, as may be seen by consulting Plato's "Republic," book ii., 368. It is also modern, as may be seen by consulting Cousin's "Lectures on

* "Practical Essays," p. 147.

Modern Philosophy," vol. i., lecture ii. Let this examination of products be accepted for what it is really worth, and that it is worth much I cheerfully admit; but it is in no sense a substitute for the reflective study of mind itself. We would learn but little of the structure of a grist-mill by simply examining the feed and flour that are found in the bags.

3. The microscope and the scalpel have told us much, and will doubtless tell us much more, about the structure and functions of the *brain*, and some light is thus thrown on the physical conditions of mental life; but mental phenomena will forever escape the senses of sight and touch—they must continue to be studied, as they always have been studied, by the mind's own reflective effort.

4. The fate of phrenology might teach us a wholesome lesson respecting the value of the physical method of studying the mind. On the basis of these pretended discoveries a reform in education was advertised and even attempted, but, beyond an increased interest in physical education, the world still keeps on its accustomed way.

In what has preceded, I have attempted to assign my reasons for the belief that no *revolution* in education is imminent; that no new discovery is likely to be made in the nature of the human mind, or in human destiny, that will make necessary, or even possible, a "new education." That virtual discoveries are still to be made in both these fields, and that there is to be continuous and indefinite progress in education, I most firmly believe; and on these two topics I would add the following observations:

1. In the sciences of psychology, logic, ethics, sociol-

ogy, and physiology we have the *disjecta membra* of a science of human training; and in the co-ordination and harmonizing of these elements, and in the transformation of these first truths into rules for practice, there is work enough for several generations of clear-headed thinkers. It is not a little amusing to note the fervid aspirations of some for new and far-remote worlds to conquer, while there are whole continents lying before their very doors, waiting to be explored and appropriated. There is not an elementary text-book on mental science that does not embody doctrines which, if vigorously applied in the deductive way, would expand into a volume of rational method. The law of the descent of the mind from aggregates to elements, and from the vague to the definite, is just as well established as the law of gravitation, and is just as comprehensive in the scope of its applications. Almost the whole of method is involved in this fundamental law. Here is a world that has long since been conquered by mental science, but it still waits to be explored and appropriated by educational science. I think it must be counted one of the standing marvels of educational history that so open and so inviting a field has not been cultivated.

Another field, quite as broad, perhaps even more inviting because of its difficulties, and as yet hardly touched by the pioneers in educational science, is the doctrine of motive. This doctrine underlies the whole subject of school government, and, indeed, the whole art of giving instruction. If we define teaching as the art of causing pupils to learn, we may truly say that this entire art hangs on the deft manipulation of motive.

Not much substantial progress can be made in education, as it seems to me, till we have a pretty definite

scheme of education values. We need to know, with considerable exactness, both the quality and the amount of work that can be done by the educational agents, arithmetic, grammar, history, science, etc. This is a most interesting and promising field for investigation.

I have now briefly indicated three important regions of professional investigation; and I submit that some of the surplus zeal of our reformers might be most profitably turned into these channels.

2. At this point some will doubtless interpose the objection that the mode of study I have commended will induce a surfeit of educational theory; and will demand a course of study on the practical or experimental plan. I am glad to respond that, if I have any hobby whatever, I think it is the study of the experimental phase of the educational problem. In all the past, the business of education has been conducted almost wholly on the experimental plan; and I firmly believe in the almost incomparable value of a careful study of these long-continued and varied experiments. I have already pointed out the fact that all conceivable solutions of this complex problem have been attempted; that the Greek, the Roman, the Jew, the Egyptian, the Hindoo, the Persian, the Protestant, the Catholic, the Free-thinker, the German, the Frenchman, the American, the Englishman, the Monarchist, the Republican, the Absolutist—that everybody, in fact—has been working at some phase of this problem ever since the dawn of civilization; and now it is to be observed that, through the foolishness of reading, we may make a critical survey of all the notable instances in which education has thus been put on trial. How are we to account for the curious fact that the teaching class, as a whole, is profoundly ignorant of the history of edu-

cation? Of this there can be but little doubt: the effect of such a study would be both conservative and constructive; there would be a hearty respect, if not reverence, for the present status of education, as it has been the issue and outgrowth of the entire past; and we would witness an orderly and rational effort to determine the future of education by legitimate processes of growth. I may be too sanguine in my faith in the utility of educational history as a means of promoting continuous and orderly growth; but I can scarcely doubt that it would be a virtual specific for educational spasms.

3. As I conceive the nature of real progress in education, the philosophy of spirit is the light beaming from afar that points us towards the harbor we hope finally to enter; while the history of education is the light that keeps us in constant remembrance of the port from which we are sailing; and it is only by correcting our course by means of these two lights that we shall make our voyage safe and continuous. If I may still use this figure, our course hitherto has been too much like that of drifting along unknown shores while on a purposeless voyage, or like that of tacking before head-winds, or of being fiercely driven, first by a gale blowing from one point of the compass, and then from another. What we need is to bring about a forward movement in a direct line, by availing ourselves of the grand resultant of all the forces we can press into our service. The chief work of the present, as it seems to me, is, first, that of summing up the net results of our progress thus far, and then of patiently co-ordinating, harmonizing, unifying, and systematizing. It is in these regions that we are to court the breezes of real progress.

I will now consider the claims of the "New Educa-

tion" on the intelligence and confidence of men, by reason of what it has actually accomplished. I wish, if it be possible, to discover the general direction of this new movement, whether it is towards the truth or away from the truth. That there are some difficulties in the way must be admitted. It is hard to analyze an ejaculation, an aspiration, or a sigh; and, while the wholesale denunciation of whatever has been and is shows us pretty plainly what our reformers propose to abandon, they give us but little help in determining what will be substituted for the chronic ills of the present. Fortunately, however, this new educational gospel has apparently settled one article of its creed, and so has put one item of doctrine into a tangible shape. As I repeat this favorite formula of the "New Education," please recall the saying of Pestalozzi about reversing the European car of progress, and the advice of Rousseau about taking the roads directly contrary to the ones in use. Among the noted educational reformers, exaggeration seems to be a hereditary trait. The creed of the "New Education," so far as it has been formulated, is embodied in this text: *We learn to do by doing.* My purpose is to discover whether this new movement is in the line of historic truth, or whether it is a departure from the truth. Twenty-four centuries ago, Bias, one of the seven wise men of Greece, left to the world this apothegm: *Know and then do.* Twenty-one centuries later, Lord Bacon wrote: "Studies perfect nature, and are perfected by experience." In both these cases the sequence is the same, the antecedent to *doing* is *knowing;* we learn to do by knowing. At the present moment, all professional and technical instruction is administered on the hypothesis that knowing is the necessary preparation for doing; and the

term quackery has been set apart to express the common contempt for the practice of learning to do by doing. Here are three landmarks appearing at intervals through a long procession of centuries, and they are all in a direct line. The thought of Bias is sanctioned by Bacon, and embodied in the very civilization of the present moment. If anything has been settled by the experience and common-sense of mankind, it is that action should be preceded and guided by knowledge. Now what shall be our judgment of a proposed revolution, the first and, so far as announced, the only principle of which is a bald denial of a universal truth? This seems like the culmination of presumption. Pestalozzi would reverse the car of European progress, but the latest reformers have undertaken the task of reversing the car of the world's progress. But Pestalozzi failed in his modest undertaking. We must distinguish the intellectual phase of this movement from its emotional phase, and, in respect of the former, it seems to me that the outlook is hopeless enough.

The main conclusions of this inquiry I now summarize as follows:

The promise of a "new education," as something radically different in principle and method from the education of the present, implies a gross misconception of the nature of normal progress, as well as an ignorance of what has already been done in this field of human effort.

The possibility of a complete revolution in education implies one of three things: (1) either that there is to be a radical change in human nature; or (2) a radical change in human destiny; or (3) that educational processes hitherto have not been adapted to human nature or to human needs.

As there is not the least probability of any imminent change in the constitution of the human mind, or in the conception of man's destiny and needs, and as it is inconceivable that the world thus far has been radically wrong in the practice of education, it is inconceivable that there is to be a winding-up of the present order of things in favor of an essentially new order of things.

The fact that education has been studied and practised from the earliest historic period to the present excludes any probability that there remains any essentially new phase of the problem to be presented.

Throughout the entire past education has been defective through some violation of the laws of symmetry, or proportion or harmony. While holding very strongly to one phase of the problem, the mind has let slip other phases of co-ordinate importance, so that, while there has been progress on the whole, it has not been steady and symmetrical, but intermittent and disproportioned.

Improvement in the theory of education will consist, for the most part, in extending, co-ordinating, and harmonizing old lines of thinking, and in forming a catholic view of the problem of education from the scientific study of human nature. The history of education should be made the counterpart and proof of the science of education.

In whatever has life, there will be the appearance of something new until the term of perfect development has been reached. In a certain sense, the tree of to-day is a new tree as compared with the tree of yesterday, which might be called the old tree. In the same sense, the education of next year will be new, as compared with

the education of this year. If, in the case of the tree, we were to imagine it as it probably will be after a period of a hundred years, supposing its life to be indefinite, and were then to contrast that probable tree with the actual one of to-day, we might, by cancelling the additions of each day in the century, make it appear that the two trees belong to different species, and might even work ourselves into a state of contempt for the thing that is before our eyes.

When we consider the characteristic marks of the current education, and then the marks which characterized the education in vogue just prior to the Reformation, the contrast is so striking that there is a justification for speaking of the two systems as the "old" and the "new," so long as we are intent on the study of contrasts; but when we observe more closely and discover the large element of sameness that runs through the two systems, it becomes plain that there has been no break in continuity, and that, after all, the fact of unity is the most significant mark.

In the cant of the day, the term "New Education" is the name for an aspiration; it marks a contrast between what *is* and what *is to be*. "No one can tell," we are assured on authority, "what the so-called New Education really is, from the very fact that many if not most of its principles and resulting methods have yet to be discovered. We stand on the border-land of discovery in education. . . . *There is an immense margin between the known and the unknown in education.*" Let us make an allowance for the distortion of sentiment, and call this hypothetical margin *wide* instead of *immense*. What point in the history of the last twenty-four centuries can we select and say, with any degree of truthfulness, that

the margin between what was then known on the subject of education and what is now known is even wide? What ground is there for assuming that there will be a wide margin between the present and the near future in the matter of education? I see no ground save in a distempered imagination.

That there is "an immense margin" between what is really known on education and what might be known by historical study, is discreditably true. The most fruitful field for investigation is the past rather than the future. There are some indications that we are indeed on this "border-land of discovery." If this be true, there are startling revelations in store for some. There is a thought in this quotation from a recent sermon by Archdeacon Farrar, that is worth considering:

"We boast of our educational ideal. Is it nearly as high in some essentials as that even of some ancient and heathen nations long centuries before Christ came? The ancient Persians were worshippers of fire and of the sun; most of their children would have been probably unable to pass the most elementary examination in physiology, but assuredly the Persian ideal might be worthy of our study. At the age of fourteen—the age we turn our children adrift from school, and do nothing for them—the Persians gave their young nobles the four best masters whom they could find to teach their boys wisdom, justice, temperance, and courage—wisdom including worship, justice including the duty of unswerving truthfulness through life, temperance including mastery over sensual temptations, courage including a free mind opposed to all things coupled with guilt."*

From my point of view, the main features of the so-

* *London Schoolmaster*, June 13, 1883.

called "New Education" may be stated as follows: It is the name for something which has no existence, actual or probable; the movement had its origin in sentiment, and its strength lies in the fact of its vagueness; wherever this sentiment appears in any strength it tends to destroy the school as it actually exists, but provides no definite substitute for it; it counsels a violent revolution instead of an equable evolution; it employs the language of exaggeration, and appeals to prejudices and narrow views; it preaches absolute freedom and versatility, but it is dogmatic in its utterances and authoritative in its precepts; it represents an impulse to abandon certain errors in practice, but rushes blindly into errors of an opposite sort, and so is in direct opposition to normal progress; *per contra*, it summons public attention to educational questions, excites thought and discussion, stimulates the sluggish, forces the thoughtful to give a reason for the faith that is in them, and so is perhaps the cause of some actual progress, though in itself an indication of chronic unsoundness in the intellectual condition of the teaching profession. It is better to move in this way than not move at all; but it falls almost infinitely short of an ideal mode of progress.

New buds do not make a new tree. Each year adds something new to our education either in doctrine or in method, and each day brings to the thinker some revelation of truth; but these additions are all in the line of development or growth, they are perennial buds and blossoms proceeding from the secular trunk and branches.

Mr. Bain speaks of the "difficulty of reconciling the whole man with himself;" this I believe to be one of the great problems of education which the future has to solve. The dominant purpose of Greek education was

to form the man; but the education of the present day seems intent on the formation of the instrument. In educational polemics, the real contest of to-day is between the partisans of a liberal education and the partisans of a technical education. How may an individual become and continue to be an instrument, and at the same time approach more and more nearly the typical man? This reconciliation we might honestly call the "New Education."*

There are still other tendencies to reconcile. The kindergarten embodies the conception of pleasurable, unforced activity, and of development from within outward through "gifts" and "occupations;" spontaneity is encouraged, and the child's instinct to play is turned to account. The motive to exertion is of the attractive type, and the purpose is discipline, development, formation, through a process of agreeable sense-training.

The public school, on the other hand, aims at infor-

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* In these days of narrow views as to the scope of education, when an imposing philosophy recommends that men should be trained first of all for their limited functions as instruments, it is refreshing to ponder doctrines like this:

"In the natural order of things, all men being equal, the vocation common to all is the state of manhood; and whoever is well-trained for that cannot fulfil badly any vocation which depends upon it. Whether my pupil be destined for the army, the church, or the bar, matters little to me. Before he can think of adopting the vocation of his parents, nature calls upon him to be a man. How to live is the business I wish to teach him. In leaving my hands, he will not, I admit, be a magistrate, a soldier, or a priest; first of all he will be a man. All that a man ought to be he can be, at need, as well as any one else can. Fortune will in vain alter his position, for he will always occupy his own."—Rousseau, "Émile," *op. cit.*, pp. 13, 14.

mation as well as discipline; it cultivates reflection even more than observation; when spontaneity fails to enlist the pupils' efforts in prescribed lines, it resorts to enforced activity; when attractive motives fail it employs some form of painful stimulation; it purposes to inform or furnish the mind through the interpretation of books.

Now the pleasurable, disciplinary, formative aims of the kindergarten are in themselves wholesome and commendable; but to conduct a child's education exclusively, or even very largely, on this type is to exclude him from his lawful heritage of intellectual wealth and to unfit him for the serious duties of actual life, which often demand the patient doing of unpleasant tasks. Work and play belong to different categories of activities, and education through play cannot be a preparation for a life which must be devoted to work.

The average public school, no doubt, errs in an excess of restraint, of mere book-study, and of enforced activity; and is lacking in spontaneity, joyfulness, and in productive effort, manual and mental. Too much is put into the mind and too little drawn out of it; the apprehension of truth is too often mediate and shadowy, rather than immediate and vivid.

Cannot these extreme tendencies be reconciled? Cannot the freedom and joy of the kindergarten be infused into the serious work of the public school?

In what I have now said I have expressed a candid opinion of the "New Education" as to its *raison d'être.* I do not know that any one will agree with me in my judgment; but I claim the right to form and express an opinion on a question that is now exciting so much public attention. I may be wrong in the conclusions I have reached, but I have tried to state them so clearly that my

errors will be promptly detected. "Next to being right in this world," says Huxley, "the best of all things is to be clearly and definitely wrong, because you will come out somewhere. If you go buzzing about between right and wrong, vibrating and fluctuating, you come out *no*-where; but if you are absolutely and thoroughly and persistently wrong, you must, some of these days, have the extreme good-fortune of knocking your head against a post, and that sets you all right again." *

After all, the common and solid ground on which we can all stand is the belief in continuous growth. For the present, we differ in our conception of progress; but finally, let us hope, we shall all attain to "the unanimity of the wise."

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* *Educational Times*, Dec., 1883, p. 330.

CHAPTER VII.

OF THE TERMS "NATURE" AND "NATURAL."

The terms "nature," "natural," "order of nature," etc., have gained such a foothold in modern educational literature that it is necessary to have some settled notions as to their signification if we care to interpret current discussions of principles. We are doubtless beholden mainly to Rousseau, Pestalozzi, and Mr. Spencer for the frequent recurrence of these terms, and it is unfortunate that they have not left us some definition that will make their meaning clear. As it is, there is an element of vagueness and uncertainty in their discussions that is vexatious and misleading. In his life of Pestalozzi,* Dr. Biber speaks as follows of the term "nature:" "We are perfectly willing to admit that the term 'nature,' as used by the German writers, involves a good deal of vagueness, that it is more the expression of a mysterious something than of an idea, or of a being, clearly apprehended; and that it has the disadvantage of leading the mind to rest satisfied with an obscure notion which has the appearance, rather than the reality, of knowledge. Nay, we are prepared to go further in our admission, by stating it as our belief that most of the German writers who have employed the term, if they were pushed to a point on the subject, would find themselves involved in

* E. Biber, "Henry Pestalozzi and his Plan of Education" (London, 1831), p. 178.

some difficulties and inconsistencies arising out of the vague use of a word of so comprehensive a meaning, and of such a variety of acceptations."

The vague and misleading character of this term is also noticed by Jeremy Bentham: "Of the aggregations thus formed, some have been better made, others worse. Those which he (Condillac) regards as having been better made, were (he assures us) the work of *Nature;* those which were worse made, the work of learned men: meaning such whose labors in this line he saw reason to disapprove of.

"*Nature* being a sort of goddess—and that a favorite one—by ascribing to this goddess whatsoever was regarded by him as good, he seems to have satisfied himself that he had proved the goodness of it; and, by so concise an expedient—an expedient, in the employment of which he has found but too many successors, as well as contemporaries and predecessors—he saved himself no small quantity of trouble.

"*Nature* is a sort of fictitious personage, without whose occasional assistance it is scarce possible (it must be confessed) either to write or speak. But, when brought upon the carpet, she should be brought on in her proper *costume*—nakedness: not bedizened with attributes; not clothed in *eulogistic*, any more than in *dyslogistic*, moral qualities. Making minerals, vegetables, and animals—this is her proper work, and it is quite enough for her: whenever you are bid to see her doing *man's* work, be sure it is not *Nature* that is doing it, but the *author*, or somebody or other whom he patronizes, and whom he has dressed up for the purpose in the goddess's robes." *

* Jeremy Bentham, "Chrestomathia" (London, 1817), pp. 333, 334.

It is not a little singular that while the myth "Nature," has been discarded in physical science ("nature abhors a vacuum"), it is a favorite term in the nomenclature of educational science; and it is still more singular that a severe logician like Mr. Spencer should admit an indeterminate symbol into the formulas of an austere philosophy. Vagueness has its proper habitat in poetry and romance; so let us grant to rhapsodists and novelists the monopoly of "Nature."

In alluding to Mr. Spencer's habitual invocation of this new deity, a writer in the *Atlantic Monthly*, for February, 1883, Miss E. R. Sill, very justly observes that "probably nine-tenths of the popular sophistries on the subject of education would be cleared away by clarifying the word Nature."

The following are examples of the mischievous use of the term "Nature:" "How are we to teach and learn surely, *i. e.*, so as to be sure of our result? This is to be done by finding the *modus operandi* of Nature, and accommodating ourselves to that as follows: Nature attends to a fit time; Nature prepares material for itself before it gives it form; Nature takes a fit subject for its operation, or, at least, takes care that it be made fit; Nature does not confuse itself in its works, but advances distinctly to one thing after another; Nature begins all its operations from within outwards; Nature begins all its formation from generals, and thence proceeds to specialize; Nature does not proceed *per saltum*, but step by step; Nature, when it once begins, does not stop till it has completed its task" (Comenius).

"Watch nature carefully, and follow the paths she traces out for you;" "the internal development of our faculties and of our organs is the education nature gives

us;" "let the over-strict teacher and the over-indulgent parent both come with their empty cavils, and before they boast of their own methods let them learn the method of nature herself" (Rousseau).

"It is nature alone who does us good, it is she alone, incorruptible and imperturbable, who conducts us to truth and to wisdom;" "there are not, there cannot be, two good methods of instruction. There is but one, and this reposes absolutely upon the eternal laws of nature;" "the first tutor is nature, and her tuition begins from the moment when the child's senses are opened to the impressions of the surrounding world" (Pestalozzi).

"The spirit of God rests, lives, and works in Nature, expresses itself by Nature, imparts itself through Nature, continues to shape itself in and by Nature; but Nature itself is not the body of God, God himself does not dwell in Nature as in a house, but the spirit of God dwells in Nature, to produce, protect, foster, and develop Nature" (Froebel).

"By our various physical sensations and desires Nature has insured a tolerable conformity to the chief requirements;" ". . . items which Nature in her strict account-keeping never drops;" "that increasing acquaintance with the laws of phenomena which has through successive ages enabled us to subjugate Nature to our needs;" "it would be utterly contrary to the beautiful economy of Nature, if one kind of culture were needed as a mental gymnastic;" "Nature illustrates to us, in the simplest way, the true theory and practice of moral discipline;" "Nature is a strict accountant; and if you demand of her in one direction more than she is prepared to lay out, she balances the account by making a deduction elsewhere" (Spencer).

"How, then, does nature teach? She furnishes knowledge by object lessons; . . . she makes her pupil learn to do by doing, to live by living. She gives him no grammar of seeing, hearing, etc.; . . . she adopts much repetition in her teaching; . . . she teaches quietly, she does not continually interrupt her pupil; . . . she bides her time; . . . she does not anxiously intervene to prevent the consequences of his actions; she allows him to experience them, that he may learn prudence; sometimes even letting him burn his fingers, that he may gain at once a significant lesson in physics, and also the moral lesson involved in the ministry of pain;" "nature's teaching is desultory;" "nature's teaching is often inaccurate; not however, from any defect in her *method*, but from inherited defects in her pupils;" "nature's teaching often appears to be overdone;" "nature does not secure the results of her lessons with a direct aim to mental and moral improvement;" "nature accustoms her pupils to little, and that the simplest generalization;" "nature is relentless in her discipline;" "the educating influence, or educator, is God, represented by nature, or natural circumstances" (Joseph Payne).

I think these are fair and sufficient examples of the use of the term "Nature" in modern educational literature; but to make this inquiry more comprehensive I will add a few examples of the ancient use of this term: "By nature some beings command, and others obey, for the sake of mutual safety; for a being endowed by discernment and forethought is by nature the superior and governor; whereas he who is merely able to execute by bodily labor is the inferior and a natural slave; and hence the interests of master and slave are identical;" "every state is the work of nature, since the first social

ties are such; for what every being is in its perfect state, that certainly is the nature of that being, whether it be a man, a horse, or a house;" "in the order of nature, the state is prior to the family or individual;" "usury is merely money born of money: so that, of all means of money-making, this is the most contrary to nature" (Aristotle).

"When Polus was speaking of the conventionally dishonorable, you assailed him from the point of view of nature; for, by the rule of nature, to suffer injustice is the greater disgrace because the greater evil; but conventionally, to do evil is more disgraceful;" "nature herself intimates that it is just for the better to have more than the worse;" "on what principle did Xerxes invade Hellas, or his father the Scythians? These are the men who act according to nature; yes, by Heaven, and according to the law of nature" (Plato).

I think these quotations may be regarded as typical, and sufficiently comprehensive to furnish a basis for the interpretation of this vague term. At least, one thing is very evident even at this stage of inquiry, thinkers in all ages of the world have been fond of falling back on an assumed "order of nature" as a justification for certain opinions or doctrines. John Gillis, in his Introduction to the "Politics," speaks of Aristotle's method as follows: "In this, as in all other inquiries, his first question is, what are the phenomena? His second, what is the analogy of nature?" It is well known that by this method Aristotle finds a sanction for human slavery and condemns the taking of interest on money. In these cases it is evident that Aristotle either misconceived the "order of nature," or that he was wrong in following the lead of this presupposition.

A study of the examples just presented will show that two constructions have been put on the term "Nature," a narrow and a wide. At one time the reference is made to an individual thing, as a man, a house, or a horse; and at others to the cosmos, the universe, or the earth, as an organized aggregate animated by life and intelligence. As it is the easier to comprehend, I will first discuss the term in its narrower signification. A typical instance of this use of the term "Nature" is this example from Aristotle: "The nature of a thing is judged by its tendency; for what every being is in its perfect state, that certainly is the nature of that being, whether it be a man, a horse, or a house." I interpret this to mean that in the germ of every living thing, as a man or a horse, there is a predetermination to grow into the most perfect type of its kind; that from the acorn to the oak there is perfect continuity of growth; and that what persists through all the vicissitudes of development is this immanent predetermination, and that this is most completely manifested when the thing has attained its most complete form. This immanent tendency to grow into the likeness of a type is the *nature* of a thing, whatever it may be, as a man, or a horse, or a tree. By an easy extension of thought we may speak of the *nature* of a piece of mechanism. Thus, in the manufacture of a watch, the maker embodies in it a determination to execute movements of a preconceived kind. Perhaps the tension of the mainspring most nearly represents this immanent predetermination; but this motive power in connection with the correlated parts constitutes the *nature* of the watch. And by a similar extension of thought we may speak of the *nature* of inorganic matter, as the *nature* of iron, or of oxygen, or of light, meaning, in these cases,

some *characteristic quality.* Thus, it is the nature of iron to conduct electricity; of oxygen, to combine readily with most other elements; of light, to move in straight lines. From this point of view, perhaps, we may define the *nature* of a thing as *the law of its behavior or of its growth.*

Before leaving this narrower conception of "Nature," it will conduce to clearness to determine what is meant when we speak of "following the order of nature." In the manufacture of a watch, the maker predetermines the length of time during which the tension of the main-spring will carry forward the movement of the hands, and also the direction in which this spring will uncoil; and so in winding a watch we "follow the order of its nature" when we turn the key in a certain direction, and observe a certain interval between successive windings. Thus, it is the *nature* of some clocks to run twenty-four hours, but of others, eight days; and in the management of these clocks we must adapt our treatment to their several *natures.*

And so we "follow the order of nature" when we feed horses oats, and hyenas meat; for by their original constitution horses were predetermined to subsist on vegetable food, and hyenas on animal food. It would be "contrary to the order of nature" to feed horses with meat, and hyenas with pastry.

A characteristic property of phosphorus is its tendency to ignite on the occasion of slight friction; and so we "follow nature" when we tip matches with phosphorus. To tip them with graphite would be "contrary to nature." These illustrations are perhaps sufficient to make clear the narrower use of the term "Nature."

When we are told to "watch nature carefully, and follow the paths she traces out;" that "the first tutor is nature, and her tuition begins from the moment when the child's senses are opened to the impressions of the surrounding world;" that "nature illustrates to us, in the simplest way, the true theory and practice of moral discipline;" and that "nature furnishes knowledge by object-lessons," it is evident that we have to do with a much wider, if not a very different, conception.

In these instances the reference is not to a quality or a law, but to a living, intelligent, and deliberating personality. As Bentham correctly observes, "Nature" is here "a sort of goddess," "a sort of fictitious personage." This goddess is an incomparable guide, a pattern of wisdom, economy, and forethought, whose methods are the archetypes of the teacher's methods. But this statement explains nothing, and puts the thoughtful teacher no further on his way towards a rational system of practice. Such statements simply daze and bewilder the readers of educational literature.

In order to render to ourselves an intelligible account of this modern myth, we must try to master the conception of the universe which seems to underlie the newest system of philosophy. The naïve mind of the fertile and imaginative Greek peopled mountain and vale, woodland and stream, with presiding and protecting deities. Air, earth, and water were peopled with a host of divinities, whose joint action controlled all terrestrial phenomena, organic and inorganic. But this host of gods and goddesses, of satyrs and nymphs, has been dispersed, and no one is now conscious of their presence; but for this old terrestrial polytheism there has been substituted the modern terrestrial monotheism. The goddess "Nature"

has replaced Vulcan and Ceres, and Juno and Hermes, etc. The powers and functions that were once exercised by an innumerable host of divinities are now ascribed to the one supreme goddess, "Nature."

The conception of the earth as an animated organism is not new, but the doctrine of evolution has served to revive it and to give it a higher degree of definiteness. Under this conception, earthquakes, volcanoes, cyclones, tides, the birth, growth, and decay of animals and plants, the formation of crystals, minerals, etc., the march of a pestilence, the invasion of a cultivated district by a horde of locusts or caterpillars, are all the effects of the volitional acts of "Nature." All terrestrial phenomena are exhibitions of power, and this earth-power, when personified and invested with the attributes of intelligence and wisdom, is "Nature." A cave, or a bower of trees, is a "natural" house; a tree that has fallen across a stream is a "natural" bridge; beavers, bees, and birds are "natural" architects; fruits that grow spontaneously are "natural" fruits. From this point of view, "Nature" may be called "the Law of Evolution."

Perhaps we can gain the clearest conception of "Nature" as here considered, by imagining the earth as it was immediately prior to the advent of man. There were forests, mountains, meadows, lakes, rivers; there were beasts, great and small, bird and fowl, insect and reptile, sea-monster and fish; there were thunder and lightning, rain, hail, and snow, hurricane and flood; there were day and night, winter and summer, heat and cold; there were birth, life, and death, creation, growth, and destruction; and all these were the works of "Nature." Man had not come to mar and spoil. "Nature" reigned supreme. There was nothing to oppose the "order of nature."

Now let a single creature of the human species be introduced on the scene, and imagine that, while he stands at the head of creation in point of brain power, he lives a purely instinctive or animal life. When hungry, he goes in quest of food, when weary, he rests and sleeps, when warm, he seeks the shade, when cold, he retreats to a thicket or a cave. He eats to live, and he lives to eat. Finally he reaches the "natural" term of his existence, and dies and returns to dust. This man was purely a "natural" product, just as trees and squirrels and stones are. He was just as loyal to "Nature" as the lamb or the dove. He was acted on by his environment, and in turn he reacted on his environment. Once menaced by a ferocious beast, the experience was recorded in his brain, and afterwards, for self-preservation, he either defended himself or fled. His whole life was thus a course in self-tuition. "Nature" taught her brightest pupil by object-lessons. His education was purely "natural." "The ways of nature are the easier ways," says Charles Francis Adams. This supposed case then exemplifies the ideal education, for it was conducted wholly by "Nature." As a matter of fact, human art has interfered so little in the education of savages that they might conveniently be taken as models of what "Nature" can do when she is not hindered and thwarted in her benign work.

During the lifetime of this man, countless experiences must have left their impressions on his mind, and this residuum must have constituted some kind and degree of wisdom; but when he died, "his wisdom went with him," and his successors on the earth must have begun where he did, and must have stopped where he stopped. This supposed case exemplifies Mr. Spencer's statement,

that "humanity has progressed solely by self-instruction."* Now let us suppose that several creatures of the human species appear on the scene, and that they dispute and resist the domination of "Nature." They select some plant which yields them food, and favor its growth by loosening the earth about its roots, and by destroying the weeds that compete with it for light, moisture, and nutriment. They enclose this cultivated space, and thus protect that on which they have bestowed their labor from the "natural" incursions of beast and fowl. Not satisfied with "natural" protection from rain, wind, and snow, they build themselves houses and make themselves garments. For mutual aid and comfort they devise a system of signs for communication by ear and eye, and as an aid to memory they record their experiences in written language. New members now join this primitive community. They at once participate in the food, the shelter, and the language which they found ready prepared for them, and thus start on their forward march somewhat at the point where the elders of the community will stop. These elders finally succumb to "Nature," but they leave behind them the records of their experiences in doing and thinking. They die, but their wisdom does not go with them. Their successors interpret these written legacies, and the time which is thus saved from rediscovery they employ in making new discoveries. To require each new member of the human family to repeat the experiences of his predecessors on the earth would be to ordain a perennial relapse into savagery. A necessary factor in progress is inheritance. There can be no advance in wisdom without capitalization.

The changes wrought in the domain of "Nature" by

* "Education," p. 125.

the self-determining and creative power of man, we ascribe to Art. Man is the only creature that has the power to react deliberately on his environment, to modify it to suit his needs and fancies, and virtually to recreate it. We shall now gain a clearer conception of "Nature" by contrasting her works with those of Art. It is this contrast, and the questions growing out of it, that form the warp and woof of such discussions as those of Joseph Payne and Herbert Spencer. These writers warn us against the evils that have been brought into education through man's device, and pathetically counsel us to imitate "the methods of nature."

If, through the annihilation of the human race, the earth were to be released from the dominating power of man, there would follow a gradual relapse to the "state of nature;" and all that would be lost by this relapse represents the net achievements of human art. By this gradual downward transformation the earth would doubtless be better adapted, first, to semi-civilized races, then to barbarous people, then to savages, and, finally, to brutes and reptiles; but if it were again to be prepared for the uses of civilized man, the upward transformation must be wrought by human art. In these discussions, our point of departure must not be the brute, the savage, or the barbarian, but the civilized man of modern society. We must not even assume that the savage is to remain a savage, but the rather that he is to be transformed into the likeness of the highest type of his kind. Mere "Nature," as contrasted with Art, can never effect this transformation. We are to recollect that the state into which the children of modern society are born is not a "state of nature," but a state in which Art is at least a co-ordinate factor with "Nature." Accepted beliefs,

social, political, and religious, formulated truths in science, ready-made languages and literatures, are just as truly a part of the child's environment as atmosphere, soil, and climate.

The savage is a typical specimen of what "Nature" can do in the line of educating, and I know no fairer concrete test of the good and bad qualities of "Nature's method" than the actual mental and moral state of the savage. The savage is truly "Nature's" own, for she has fashioned him in her own way. He has not been spoiled by the arts of the priest, the politician, the tailor, or the teacher; or, if "Nature's" methods have been modified to some slight extent by heredity and tradition, this interference is not sufficient to disguise the major and characteristic part of the process. To one who would pass from poetry to science, and would attain to clearness of conception, I would seriously recommend that he substitute for the vague formula "Follow Nature" the intelligible precept "Imitate the method by which the savage is educated." The essential facts in the case may be summarized as follows:

1. To use Joseph Payne's phraseology, these children of Nature are taught by object-lessons. They are instructed through a process of sense-excitation. There is an irregular stimulation of the sensibilities, and in certain directions the power of observation attains an animal acuteness.

2. As the flow of mental activity is mainly outward, the reflective effort is correspondingly weak, and all real intellectual effort is made impossible through mental lassitude.

3. It goes without saying that, in the total absence of teachers, schools, and books, the instruction which "Nat-

ure" furnishes the savage is wholly concrete; it has reference to individual things, and is addressed directly to the senses.

4. As "Nature" proceeds by way of sense-stimulation, and as wholeness or concreteness is essential to this end, the savage is not taught to discriminate; he never makes a resolution of his sense-intuitions. In other terms, "Nature" does not teach her pupils to think. The savage lives in the hourly presence of the most striking natural phenomena, but he never learns natural science. In this respect "Nature" is the archetype and original of all poor teachers. She constantly dictates lessons to the memory, but she never stimulates the understanding. A surfeit of *things* is just as easy and just as bad as a surfeit of *words*.

5. In the way of discipline, the savage is treated with indiscriminating and heartless severity. In all her retributions, "Nature" is pitiless and unforgiving; she has no "bowels of compassion." The innocent babe has no more consideration than the deliberate villain. "Nature" never excuses, never relents, never suspends sentence. In this respect, too, she is the archetype and original of all brutal teachers.

6. As the net result of the training which the savage receives in the school of "Nature," he is the fit companion of stocks and stones and brutes. He is so purely a "natural" product that, with reference to his environment, action and reaction are nearly equal. His power of reaction is so feeble that he is the slave, and not the master, of "Nature;" and no radical amendment, in his case, is possible without a change of teachers.

7. As, by the terms of the new mythology, "Nature" is a teacher, so, of course, she has a book, "the book of

Nature," which the poet and the poetic scientist and the glowing reformer bid the young to read. How does it happen that, with this so-called book opened before him from birth till death, for countless generations, the savage, to this day, has not learned to spell out the first word? Here, again, "Nature" is the archetype and original of inept teachers. Before the works of creation can be interpreted and admired, there must be a long course of training by humane teachers. The savage is a chained prisoner in the cavern-house of "Nature," crippled and blind and stupid; from this bondage he must be released, even by violence, if needs be; and, after he has been taught to discern the real forms of truth and beauty, he may return to the cavern, and interpret the shadows that flit across the prison wall.

To the question how far we should imitate the mode by which the savage is educated, this is the only safe response that can be given: *Only so far as the child resembles the savage, and so far as the child's world resembles the savage state.*

The savage is an animal, with the distant possibility of becoming a man; in civilized society the infant is an animal, with the near certainty of becoming a man. The initiatory development of this common animal element is doubtless through a process of sense-stimulation. But, to use Plato's imagery, the child must gradually be released from the toils of sense by being taught to reflect, to think, and to reason. "Nature" is as powerless to do this work as she is to produce an edible potato or to construct a telescope.

The child is born into a world that has been rescued, in part, from the domination of "Nature," and transformed by human art. He enters this reconstructed

world the very moment he becomes distinctly self-conscious; and from that moment "Nature's" indiscriminating and heartless tuition begins to wane, and man's discriminating and humane tuition, to wax.

From the moment of birth, and through all his subsequent years, the child must profit from vicarious experiences. He need not blister his little fingers in order to learn that fire is dangerous, or swallow arsenic to prove that it is poisonous, or travel to London to know that there is such a city, or die to be certain that he is mortal, or run a course of vice to prove that it is ruinous. Neither need he be a physician in order to enjoy the advantages of medical science, nor a lawyer in order to protect his civil rights. The child is the heir of all the ages. He may become a man without repeating the experiences of the savage and the barbarian.*

I will now return for a moment to the narrower con-

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* "Human beings alone, as Herder has said, enjoy the possibility of capitalizing their discoveries and of adding new acquisitions to their more ancient acquisitions, so that each one of us is the heir of an immense stock of consecrations, of sacrifices, of experiences, of reflections, which constitute our patrimony and connect us with the past and with the future. There is no philosophy more superficial than that which, taking man as a selfish being, and interested only in what pertains to his own life, pretends to explain him, and to trace for him his duties, while leaving out of account the society of which he forms a part. As well consider the bee apart from the hive, and say that by itself it constructs its cell. Humanity is an aggregate, all of whose parts are essentially related to one another. We all have an ancestry. That friend of truth who suffered for her centuries ago conquered for us the right to freedom of thought. It is to a long series of worthy and obscure generations that we are indebted for a country and for civil freedom." — Renan, *op. cit.*, p. 6.

ception of "Nature" and "natural," as when we speak of the *nature* of water, of a tree, or of a mineral. The mind has its own nature in the intelligible sense that it is endowed with a predetermined and uniform mode of activity. Thus, in the reaction on the material presented to it, the first effort of the mind is towards resolution or disintegration, and the succeeding or complementary effort is towards assimilation or integration; and the teacher may be said to "follow nature" when he presents material in the form of aggregates, and then stimulates the mind to resolution and assimilation. Whether the presentation be in the concrete or in the abstract, it is equally "natural," for it is an aggregate that permits the mind to work in its normal way. In actual practice, this is merely a question of ease or difficulty. Each moment of his life the child is confronted with purely concrete presentations, such as physical phenomena, which he is utterly powerless to resolve, while at the same time he finds it easy to resolve propositions that, to a considerable degree, are general and abstract.

The conclusion of the whole matter seems to be that the education of a human being is jointly natural and artificial, and that errors in practice come from an extreme tendency in either direction. Education must respect the laws of growth that are immanent in the child, and must be guided by them. To this extent the teacher should "follow nature." But, in the matter of vicarious experience, in the selection of matter for the process of mental elaboration, and in stimulating the effort at resolution and assimilation, we find a wide and attractive field for the display of the teacher's art. Education is not a process of *laisser-faire*, but of *faire-faire*.

The distinction between nature and art may be use-

ful for purposes of discussion, but it has led to gross errors in theory, and, in any comprehensive view which we may take of life, it is unfounded. The instinct of the bird to build its nest, or of the beaver to construct its house, is *natural;* and the nest and house are, also, *natural.* Is not man's instinct to build likewise *natural?* and is not his house as much a "work of nature" as the beaver's house? The chirp of a bird and the growl of a beast are doubtless *natural.* Why not the articulate speech of man? How did it come to pass that man fell upon the art of writing, unless this were *natural* to him? The squirrel lays up a stock of nuts in store for winter, and we call this prevision natural; man capitalizes his acquirements in knowledge, and why is not this prevision, also, natural? The only essential difference in the two sets of cases just presented is that the prevision of animals is instinctive, while in man this prevision is the result of deliberate calculation. Is deliberation, therefore, *unnatural?*

If the view here taken is correct, it follows that, in a philosophical sense, the most consummate human art is still natural. Under this view we can subscribe to the dogma, "Follow Nature."

CHAPTER VIII.

THE POTENCY OF IDEAS AND IDEALS.

Without using the term ideas in the Platonic sense, as the archetypes of created things, we may still say that fruitful ideas are immortal; that while the particular forms in which they have been embodied may disappear, the content persists, and will reappear in other forms, and thus maintain a continuity of existence. Ideas, such as I have in mind, not only have an inherent vitality, but also a native energy, whereby they are ever striving to embody themselves in act. The artist must embody his ideals on canvas or in marble; the inventor his in a machine; the political philosopher his in a model republic; and so on to the artisan, who fashions his work according to some pre-existing idea.

Our lives are unconsciously moulded by our ideas and our ideals. We are ever tending to grow into certain forms that have been impressed on our minds as ideas. We spend our lives in constructing, and we construct according to models and patterns. When we construct ill, the fault is oftener in our models than in our fingers. The cook who would serve us a toothsome roast must, first of all, have what Plato would call the *idea* of a roast; and not only this, but, once having a clear idea of a roast, the novice will be able, on occasion, to make his hands execute what his head prescribes. Whether we are to paint a picture, build a house, teach a school, or bake a biscuit, the first condition of success is a clear

idea of the thing we wish to do; and the other half of this truth is that, once having such ideas, we are under a virtual compulsion to embody them in act. The acquiring of manual dexterity is a secondary consideration, and, in the learning of an art, is wholly subordinate to the formation of a model as a mental image.

The view opposed to this is the stronghold of empiricism. "We must learn to swim by swimming," say the practical philosophers whose voices are now loudest in the land. "We must learn grammar by using language," is another form of this popular doctrine. The mischief done by such dogmatists lies in the fact that these dicta embody one phase of a truth while concealing a complementary phase. We have the authority of a noted clergyman for saying that "a half truth is a whole lie." While, in all constructive efforts, a definite idea of what is to be done is the first condition of success, a second and secondary condition is the empirical effort. My ground of dissent from the "practical" view is, that this empirical effort is put forward as the prime and sufficient condition of success in construction. One might, if he were stupid or obstinate, learn the route to London by going there; but the prudent traveller would form a mental trace of the route in advance as the only means of co-ordinating and economizing his efforts. I believe the first condition of success in the work of education is the formation of distinct and adequate ideas of what it is to educate, what it is to teach, what a school should do, what it is to organize and to govern, etc. One's own experience as a pupil, and the observation of excellent educational work, will furnish the teacher with valuable ideas; but, as all human models are imperfect, there must be formed in the mind of the teacher an ideal

type of excellence far superior to anything that offers itself to the observation, and even far beyond anything that is actually attainable in practice. The ideal is always unattainable, but it is approachable; and no work above mediocrity is possible save on the condition of striving towards an ideal.

How shall the teacher form the ideals that are required for work of the highest quality? This I believe to be the fundamental question in educational progress. If by any means the teachers of the country could be helped to a correct notion of what education ought to be, of what mental growth really is, of what teaching should be, a marked advance along the whole line would be assured.

History tells us what education has been; observation may show us what it now is; and, by the comparison which is thus made possible, we may discover the direction of progress, and thus, at least, adumbrate the education of the future. We still need a third point towards which we may project the lines roughly determined by the two points furnished by history and observation; we still need an ideal—a conception of what education *ought to be.* This ideal must be a mental creation. To the notion of education given us by observation, the mind must add something by its conceptive power, and thus furnish us with our ideal. The constructive imagination must employ materials furnished us by reflection. Reflection upon what? For the formation of the ideal intellectual education we must reflect on the facts of mind and the laws of its activities. In this way we can form a conception of what mind is and in what mental growth consists; and, by an easy transition, we attain our ideal type of man as an intellectual being. By a similar process we may conceive types of physical and moral per-

fection; and, finally, we attain our ideal of man as he ought to be. Now, that art by which man is helped to grow into the type of his kind is education in its broadest sense, and the teacher's education that does not end in the formation of such an ideal fails in its most important purpose.

In the last analysis, all education is based on a belief in the *potency of ideas.* "As a man thinketh, so is he," is the truest of educational philosophy. All men are governed by some *belief.* In business, in professional, in literary, in political, in religious life, and equally in a life of leisure, there is always the domination of ideas, or the directive and plastic action of theory. In a recent lecture Mr. Quick has said: "Englishmen in general, schoolmasters in particular, seem anxious to do without theory. Does it never occur to them that, if they are afraid of theory, they must do without science and without religion? All science is theory in one sense of the word, all religion is theory in another sense." In moral education, the first essential is the formation of a vivid conception of the *ideal life.* Then we have something to aspire after, to hope for, to strive for. It would be the saving of multitudes of the young if they had some good or beautiful thing to look forward to. In later life we will endure the horrors of the *mal de mer* if we may see London, or Paris, or Rome; and many a boy might go bravely through his declensions and conjugations if there had been implanted in his mind the anticipated delight of reading the Æneid or the Iliad in the original. An idea colored with emotion becomes a motive. Motives either attract or propel, and the great secret of education is to transform the animal into a man, by implanting in him a proper motive of the attractive

sort, and, finally, by investing him with the power to determine for himself an intellectual motive, as distinguished from the merely sensuous impulse that governs the animal.

Or, from another point of view, the problem of education may be stated in this way: *To secure the ready disintegration of mobs.*

A Greek proverb says: "A mob has no brains;" the meaning doubtless being either that the only brain concerned is that of the leader, or that the units composing the mob have only one brain in common. In either case, disintegration will come the moment each of these units can determine its own motive instead of being controlled by a motive of another's imposition. For example, in our politics there is a large mobile element, the purchasable factor, that has as little self-determining power as the ballast of a sailing-vessel. Could each of these "electors" be given the power and the will to do his own thinking, the problem of political education would be solved. Which is better for the citizen, the practical drill of the "primaries," or the serious reading of the "Republic" and the "Laws"? It is no paradox to say that we should learn to swim, *i. e.*, form an idea, pattern, or theory of swimming, before we plunge into the water, to the end that we may safely and thoroughly learn the art of swimming. In other words, we should *know*, to the end that we may *do*. First the head and then the hand; finally, the hand inspired and guided by the head. In going from the old faith in the potency of ideas and ideals we have degenerated. We are following false gods.

Socrates identified knowledge and virtue, holding that, if a man does wrong, it is because he does not know the

consequence of his proposed line of conduct. The latest of modern ethical doctrines is to the effect that the mere knowledge of what is right has but little effect on the doing of right; that conduct is determined mainly by habit; that ethical precept or ethical theory is of but little account; but that ethical practice confirmed into habits of right living is the only valid moral training. And, in matters other than ethical, it is now held that theories or ideas are comparatively impotent, but that experience or practice is the main essential. The difference between the ancient theory and the modern is almost world-wide, and in this instance we have a striking exemplification of the fact that human opinion oscillates from one extreme position to another, the periods of vibration sometimes being centuries. No one, nowadays, holds the extreme Socratic doctrine. It omitted to take account of habit and heredity, as well as of that atrophy of the will which is induced by intense emotion. The modern doctrine is equally partial and misleading; it obscures the potent influence of thought upon conduct, and exaggerates the empirical element in human training. The ancient doctrine is the nobler and the safer; and, as a matter of fact, it underlies most of the modern systems of ethical and professional instruction. In the sermon, in the Sabbath-school lesson, in the law-school, in the medical college, and even in schools of technology, the Socratic doctrine, in its main elements, still holds the right of eminent domain. In modern education it is a dominant idea, and is itself a curious proof of the potency of ideas. Our reformers insist that a theory of what is to be done is of very little account; but still they feel impelled to tell us that the old theory is wrong, and that their own theory is to be preferred. They in-

voke the potency of ideas to disprove the potency of ideas!

Men are sometimes said to be possessed of an idea, the meaning doubtless being that a thought has been sharply defined, and that this sharpness of definition has excited a strong emotion, so that the activities are now turned towards a determined object. Religious or philosophical or political propagandism illustrates possession by a dominant idea. And what is prejudice but the dominant power of an idea? And what truer account can we give of the mechanism of envy, jealousy, malice, resentment, etc., than to say that in each case a dominant idea has excited a strong emotion, and that this emotion serves as a stimulus to action? And what is insanity or monomania but an extreme case of possession by an idea? Ascending now to the higher regions of thought and emotion, what is the highest virtue but the highest conception of duty, accompanied by the stimulus of an exalted emotion? The best man is he who has the highest and clearest conception of what he ought to do and to be, and then turns all his activities towards the attainment of the ends discerned by the intellect. The clear definition of an ideal is the most potent factor in moral training.* The strength of Christianity lies in this fact. No other religion presents such an exalted ideal of moral excellence, and the Christian life is an illustration of the potency of ideas. In art, the truth just alleged is so ob-

* "Every one of us has within him an ideal man, which he strives, from his youth upward, to cherish or to subdue. . . . But the ideal man comes upon the earth as an anthropolithe (a petrified man); to break this stony covering away from so many limbs that the rest can liberate themselves, this is, or should be, education."—Richter, *op. cit.*, p. 35.

vious as to make formal mention of it almost unnecessary. The skill of the painter or sculptor is not so much in the deft hand as in the vivid and trained imagination. The true artist is possessed by his ideals. The necessary antecedent to the production of what is beautiful is the conception of the beautiful. Not only this, but a vivid conception of the beautiful will, by a fundamental law of nature, embody itself in artistic creation. Artistic training is an affair of the head rather than of the hand. It is the prerogative of spirit to impress its forms upon matter; nay, more, it is the law of spirit—not *may*, but *must*.

In some cases we can eliminate the manual element in training from the mental element. In penmanship, for example, the right hand may alone have been actually trained in writing, but, on occasion, the left hand will trace the letters without any previous empirical training. Whence came this ability? Evidently from the formal intelligence. The whole process might be briefly described as follows: Through the sense of sight the forms of letters are impressed on the mind; these forms are reproduced by the right hand; this reproduction by the hand reacts on the mind in the way of sharper definition; and, finally, this sharpness of definition gives immediate skill to the left hand. In the region of manual training this case exhibits the potency of ideas. It also exhibits whatever truth there is in the latest educational cant, "We learn to do by doing." In all rational practice the antecedent to doing is knowing. No one but the veriest quack will set about the doing of a task without having previously formed a mental conception of end and means. Every man who has a mind of normal power holds a theory of life; he has formed a concep-

tion, more or less definite, of what human life ought to be; and then his main activities are co-ordinated, in some degree, towards the attainment of his ideal. It has been well said that every man must philosophize; it should also be said that every man is bound, by a dominant law of his nature, to follow the precepts of his philosophy. Wherever, in the conduct of life, there is an observed discrepancy between theory and practice, it will be found that the dominant theory is not the one that is professed.

Historical illustrations of the potency of ideas may be found on every hand. Perhaps the most striking is what is known as the "Holy Roman Empire." It has been described as "that idea, that belief, created by memory and imagination, which acted as one of the great forces to prevent Europe from splitting into fragments. By persuading men that they all still belonged to one common whole, it served as an artificial bond of union at a time when a bond of union of some sort was most vitally necessary. It exercised as strong a control over the men of those generations as the most stubborn facts could have done." * What has preserved the essential integrity of the Jewish nation through so many centuries of dispersion and disaster? Evidently nothing but a dominant idea. Catholicism, Jesuitism, Protestantism, are illustrations of the same truth.

The educational bearings of this doctrine are readily discerned. If ideas, ideals, beliefs, conceptions, hypotheses, have the potency that is here claimed for them, it follows that very much of the clamor now heard in behalf of "practical" education is ill-advised and unnecessary. For all varieties of human labor, a sound mental

* G. B. Adams.

training is a necessary prerequisite. With this general preparation, an art that chiefly involves manual dexterity is best learned by the practical imitation of good models; but a liberal art, or one which chiefly involves the exercise of judgment, discrimination, versatility, taste, tact, ingenuity, etc., is best learned by mastering its theory. In all such cases the schools should furnish pupils with a science, and out of this science each one may be left to evolve his special art. In other words, a law school, a medical school, or a normal school is true to its proper function when it communicates a body of doctrine. The sciences thus learned will be converted into arts on the occasion of experience. In all instruction of this kind the essential thing is accuracy, clearness, definiteness. When this has been attained by a mind of normal robustness and alertness, the conversion of potential into actual power is not attended with any serious difficulty. This doctrine has a direct bearing on the education of teachers. Some arts are purely mental, as poetry; others are almost purely muscular, as mining; and still others involve both mental and muscular dexterities, as music and sculpture. Preparation for arts of the first class is purely mental; for arts of the second class, almost purely manual; and for the third class, mental and muscular jointly. Teaching proper is an art almost as purely mental as poetry. The training of teachers has often been likened to the training of sculptors. Nothing but persistent practice, it is said, can give the sculptor the muscular deftness that his art requires. But the analogy between these two arts does not lie in this direction. The teaching art does not require manual or muscular dexterity. The analogy is wholly on the mental side, as the most necessary endowment of both teach-

er and artist is a vivid ideal of what is to be done. Doubtless there will always be much teaching that is so spiritless as to be in a certain sense mechanical, and I fear that the method of training teachers that is most approved has a direct tendency to mechanize this art; but I write in behalf of teaching as a spiritual art, and so I counsel a different mode of preparation.

CHAPTER IX.

"PROCEED FROM THE KNOWN TO THE UNKNOWN."

I HAVE selected for examination one of the most plausible of the so-called "Pestalozzian Principles." Many teachers have accepted this as a simple axiom; such will think it absurd to attempt a critical examination of it. If this were an axiom, it would certainly be absurd to discuss its truth; and so I will begin by asserting that this well-worn "principle" is a bit of educational cant that passes current to save the labor of thinking. Axioms that are not axiomatic arrest thought; they foster the delusion that a method has received its final justification when it has been shown to be consistent with one of these assumed principles. The mischief lies in the fact that these maxims are partly true and partly false. In some cases they lead us to the truth, and in others they betray us into error.

This maxim is often employed to justify the constructive or synthetic method of teaching geography, according to which the pupil proceeds from school-yard to township, from township to county, from county to state, from state to nation, from nation to continent, from continent to hemisphere, and finally to the globe. But, if an undoubted psychological law can be trusted, this specious method is false, is absolutely without scientific justification. My faith in a psychological law is much stronger than my faith in this educational axiom; therefore I

suspect that we have to do with an axiom that is not wholly axiomatic. From my point of view, then, this examination is not absurd.

The "genesis of knowledge in the race" has been a favorite starting-point with the educational philosophers who make a liberal use of this axiom. Now it must be apparent that, with the race, the genesis of knowledge must have been from the unknown to the known; for each individual of the race had nothing in the line of knowledge to begin with, and so must have proceeded from the unknown to the known. This primal experience is typical of the experiences that follow in the life of the child; for a considerable time passes before the old is recognized in the new to a degree sufficient to fall within the compass of this rule. The child is ever encountering new sensations; but as these are simple, he derives no help from previous sensations. In his knowledge of objects, the general process is still the same; each new object is a new unknown. It may be composed of parts that are really contained in objects previously known; but, as first impressions are always confused, these parts are as yet not discriminated, and so cannot be used to analyze the new unknown.

Again, in this course of unconscious tuition, the learning of elements or parts is always subsequent to the learning of aggregates or wholes. Definitude, as Hamilton has observed, is not the first but the last term of our cognitions.* It is only in a mature period of culture that the knowledge of elements is sufficient to permit a prompt resolution of the new into the old. Childhood is well over before the resolution of the confused into the definite is well begun. One half of thinking is men-

* "Metaphysics," p. 498.

tal disintegration—the reaction of the mind in the way of analysis upon complex presentations; so that if, before the presentation is made, its elements are already in the mind, the tension of thought is low. To think vigorously, there must be some resistance; but resistance becomes less as analysis becomes easier; and analysis grows easy in proportion as elements admit of quick discernment.

If, then, the dogma, "Proceed from the known to the unknown," means that the pupil should master the elements of a complex notion before the notion itself has been presented, it is unsound from two points of view:

1. It is in direct conflict with a normal law of mental growth, a law that is stated by Hamilton as follows: "The first procedure of the mind in the elaboration of its knowledge is always analytical. It descends from the whole to its parts, from the vague to the definite."

2. In consequence of a violation of this law, this dogma, interpreted as above, absolves from the necessity of thinking. Indeed, when I think on the possible consequences of such a doctrine, I feel glad that this dogma can neither be interpreted nor applied. How happily hopeless the case is, we may judge from Mr. Bain's fruitless struggle with this "favorite maxim of the teaching art."*

So far as I am able to interpret the facts of mental progression, the normal sequence is as follows: In infancy, from the unknown to the imperfectly known; in childhood, from the imperfectly known to the better known; in maturity, from the better known to the well known. With respect to the resolution of presentations,

* "Education as a Science," p. 128.

the case seems to stand thus: in mere infancy, this resolution is impossible; in childhood, it is difficult; in maturity, it is easy. In order to maintain a normal tension of thinking, there should be this gradation in presentations: in childhood, they should be of easy resolution; in maturity, of difficult resolution. With increase of power there should be increase of difficulty. Milo, the weakling, lifted the calf; Milo, the athlete, lifted the ox.* If the maxim we are discussing means this, it expresses a great truth that all can understand and apply.

In further illustration of my subject, let me refer to what I think is the history of this maxim. In his attempt to decipher the hieroglyphic inscription on the Rosetta Stone, Champollion had the aid of neither dictionary nor grammar. He was confronted with the absolutely unknown; but such was his acuteness that he resolved this riddle, and so made it easy to read other inscriptions of this kind. Now I submit that, in a school of Champollions, work of this type is not only proper, but is the very best that can be devised; on the hypothesis, of course, that the first essential in education is discipline or training, rather than the gaining of knowledge that can be readily converted into money or bread. But as the pupils in our schools are not Champollions, I hasten to say that the tasks we prescribe should not be Rosetta Stones. Still, I think this may very well be taken as the type of work that is best for the purposes of the highest discipline; and, by making successive additions of known elements, this may be the type of work best suited to the needs of pupils in a descending scale of ability. If we

* "Milo, having been accustomed to carry the same calf every day, ended by carrying a bull."—Quintilian, "Institutes," i., 9, 5.

reflect on the two cases, we shall see that a page of the primer is to the child about what a face of the Rosetta Stone was to Champollion. In both cases, the vague unknown must be resolved into the definite known; and, in both cases, the elements that come from the disintegration of a few aggregates become the keys to the interpretation of other aggregates. Relatively considered, the child's task is the greater; but, by supplementing his weaker ability, he succeeds in doing Champollion's work.

Now, let us imagine a case somewhat more difficult. Suppose Champollion had been set to learn the sacred language of Egypt from a grammar written in Demotic; that is, suppose an unknown language must be learned by means of a book written in a language equally unknown. It is still conceivable that the acuteness of a Champollion might penetrate this double obscurity; but the difficulties of the case are too formidable to furnish us with a type for school work.

In reality, this supposed case is very like the actual case of learning Latin from a grammar written in Latin. Up to the time of Comenius (1592–1671), this was the current practice; and one of the reforms attempted by Comenius consisted in teaching Latin through the vernacular; that is, a known language should be the medium for learning an unknown language. And so we have this principle of teaching: "*Nature proceeds from the more easy to the more difficult.* We find Latin rules taught in Latin—the unknown by the equally unknown, and many other faults which will be amended if (1) the teacher speak the same vernacular as the boy; (2) if all explanations of things be given in a *known* tongue; (3) if every grammar and lexicon be adapted to that tongue

(*i. e.*, the vernacular) by means of which the new is to be learned." *

I believe that the fact just related, that an unknown language was taught by means of a language equally unknown, rather than through the vernacular, gave rise to this famous maxim, "From the known to the unknown." The maxim was made to govern special cases—the learning of new languages—and, when limited to these cases, it was eminently wise and useful; but when it was made to cover the whole field of teaching, it became what we see it to be to-day, nonsense and cant. The history of this maxim is only one illustration of the vice of mere enthusiasts—catching up a method that is good in special cases, and then putting it on the market as a method of universal application. A specific becomes a panacea. Object-teaching and the monitorial system are other illustrations of this vicious generalization.

The danger of thoughtlessly accepting a specious generalization has been admirably pointed out by Degerando as follows: "Nothing comes nearer ignorance of a principle than its excessive generalization. The imagination receives it from the hands of the genius that discovered it and carries it in triumph to the very summit of our knowledge, thus giving it a jurisdiction without limits. Then mental indolence and vanity conspire with the imagination to perpetuate this usurpation. It is so easy and so beautiful to explain everything by a common solution, and to need but one fact in order to know, or at least to seem to know, everything! There is a fashion in opinions as well as in dress." †

* Laurie, "Life of Comenius" (London, 1881), p. 91.

† J. M. Degerando, "Des Signes et de l'Art de Penser" (Paris, An. VIII.), vol. i., p. xx.

I do not believe this dogma can be employed with any certainty, save in cases where language is the medium of instruction. Thought cannot be conveyed, but only induced or provoked; and so there can be no communication between one mind and another, unless the symbols employed as the medium of communication are mutually understood. The common ground on which pupil and teacher stand is the vernacular, the known; and starting from this common ground, the pupil may compass successive portions of the *unknown*.

The wide currency given to this dogma is, doubtless, due to the prevailing assumption that the child's knowledge should be built up synthetically, starting with known elements and constructing them into aggregates. This assumption is baseless, the normal sequence being from aggregates to elements or parts. If this maxim can be construed to mean that an aggregate of easy resolution should be mastered as a means of resolving a higher aggregate, then it is true; but there is no reason to think that it is thus construed.

In conclusion, my objections to this "favorite maxim of the teaching art" are as follows:

1. It was framed for special cases, but has been generalized to cover all cases. It should be restricted to a little more than its original compass.

2. In its present state it is ambiguous, vague, in many cases of uncertain application, and in others, impossible to apply (Bain, *loc. cit.*).

3. It is a warrant for the constructive or synthetic method of instruction, as in geography.

CHAPTER X.

TRIBUTE TO FETICH WORSHIP.

Of late, countless changes have been rung on the "college fetich," and the lamentations over the years wasted in classical study have been very pathetic. From the village schoolmaster, who decries that to which he never can attain, to the college president, who would place himself *en rapport* with the mobile and dissatisfied public, we have had countless homilies on a reform in the college curriculum which should exalt the living over the dead, and thus train the better spirits of the age into fitness for the real duties of this working-day world. There is no field of discussion where it is so easy to enlist the sympathies and excite the prejudices of the unlettered and uncritical public. Life two thousand years ago, with its worship of heathen divinities, barbarous languages horrid with grammatical subtilties, all this is brought into pitiable contrast with the robust freshness of modern life, its elegant literatures, its exalted ethics, its political freedom, and its thousand charms due to the ameliorations of modern science. The only wonder is that so little use has been made of these obvious contrasts. On this theme every debating society in the land might be the nightly scene of fervid eloquence and triumphant victory, if only the "college fetich" could find a champion.

The surprising thing is that, while the arguments

against the study of the classics are so readily marshalled, and, in appearance at least, are so formidable, the colleges continue in the old bad way with placid indifference, and the students of the better mental endowment, and with the truer scholarly instincts, show a scarcely abated zeal for the study of the Greek and Roman languages and literatures. What I have particularly observed in one institution of learning I believe to be true of similar institutions at home and abroad; that the classical courses are at least fairly holding their own, and that the shifting that occurs from one course to another is generally towards the Ph. B. and A. B. courses. As it seems to me, classical teachers have been needlessly alarmed as to the future status of classical learning. They have been deceived by the noise and demonstration of the assault; but they have no just cause for alarm, provided they make instruction in the classics consist not principally in the niceties and details of the grammar, but in catching the spirit and tasting the flavor of the classical literatures. Literature is the end; grammar chiefly the means. The "Commentaries" are to be read not as the means of teaching the nature of the gerundive, the ablative absolute, and indirect discourse, but as the means of bringing the mind of the student into intimate communion with the thoughts and deeds of the ablest captain, thinker, and writer of his age, or any age before or since. Classical instruction, to hold its own, must have constant reference to "those large utterances of the early gods," and considerably less to the mysteries of the ethical dative and the subscript iota. It is to be hoped that at least this lesson has been taught by the disciples of a modern culture.

No one denies that the ancient college curriculum should be considerably modified in order to adjust itself

to the present state of human learning. An education exclusively classical and mathematical is not, for a scholar of this generation, a liberal education; neither is a man liberally educated whose training has been mainly in mathematics, modern languages, and natural science. If we adopt a distinction made by Doctor Whewell, the basis of a liberal education should be the "permanent studies," *i. e.*, those that have received their final form, such as the classical languages, certain parts of physics, deductive logic, etc., but should also include selections from the "progressive studies," *i. e.*, those now in process of formation, such as modern languages, the inductive sciences, etc. The former studies connect us with the past, while the latter interest us in the present and the future; and by their joint influence the student is made to participate in the conscious life of the race.

One of the most common, and, as it seems to me, one of the most specious, objections to classical study is to this effect: "After a student has been from college for only a few years, what has he to show for his six years' toil over his Latin and Greek? He will not venture to translate an 'unseen,' and is ill at ease if confronted with the well-thumbed texts of his college days. Of what use is it to learn at such great cost what is so soon forgotten?" The same things might be said of all studies that are not kept bright by daily use. Who that has mastered Euclid can, after five years' absence from college, give an impromptu demonstration of even a simple proposition? Yet this fact does not in the least degree impeach the worth of mathematical training. This is a formal science, and, while the matter may have disappeared, the effect of the study accompanies each intellectual act. In the region of taste, classical study is for-

mative in as true a sense and in as great a degree as in the case just cited; and if we admit, as we think it must be admitted, that the better half of culture is concerned with taste, feeling, and emotion, it follows that the classics are culture subjects in a pre-eminent degree. So far is it from being true that the value of a subject for purposes of culture can be tested by the residue held in the memory, that it may the rather be affirmed that knowledge can be transformed into faculty, power, taste, and character, only on the condition that it shall lose its identity.

Of course, this line of thought brings us into that region where the examiner's direct methods will always fail him. The scientific mind, that tests all things by rule and balance, would also find some sensible test for culture, and when he fails in this, as from the nature of the case he always must fail, he at once concludes that what he does not find is non-existent. There is no direct examination test for culture. All that is possible in these higher regions is to infer the fact of culture from certain kinds of aliment that have been found to produce it. An examiner can readily discern whether the student can interpret the language of Homer and Vergil, and to what degree he enters into the spirit of these poems—these are the palpable results of the inquest; but whether this knowledge has passed its final transformation into taste and poetic insight is a matter of inference—the product, though real and of superlative worth, is impalpable. Richter has said, "Do not in the least degree support religion and morality by reasons; even the multitude of pillars darken and contract churches."

It may be that the highest forms of intellectual culture are akin to religion and morality in respect of their

verification, and that this fact will explain the little that has been gained in the classical controversy by mere argumentation. Sentiment is often surer in its aim and swifter in its course than the cold logic of the reasoner; and it is almost a contradiction in terms to reason about what can only be felt. This line of remark is applicable to all forms of culture, scientific, artistic, historical, or literary; in no case does it admit of quantitative evaluation. In educational history, the recoil of opinion towards realism seems to have reached its limit, and the return movement towards humane culture of the classical type, to have begun. Men of scholarly instincts will continue to find intellectual delight in classical learning, and wherever the type of intellectual culture is highest, there the appreciation of classical learning will be highest.

CHAPTER XI.

LESSONS FROM THE HISTORY OF EDUCATION.

In tracing the history of normal schools in this country, I have been struck with the importance which their founders attached to the study of the history of education as an essential factor in a teacher's preparation. These New England educators of a half-century ago had a large conception of the qualifications of one whose vocation was to teach. In these proposed professional schools the subject of education was to be comprehensively studied in its three phases—as an art, as a philosophy, and as a history. This catholic scheme of professional study was worthy the men who conceived it; and though their ideal has been only very imperfectly realized, it is still an ideal for us and our successors. It is to one element in this catholic scheme of study that I would invite attention.

The importance of the study of the history of education may be urged on several grounds. I will make brief mention of some of them.

1. If we define the purpose of historical study in general to be that of forming a vivid conception of the most notable things done by the human race, we make it a culture subject in the true sense of that term; for there is a vast aggregate to enlist the comprehensive powers of the mind, a complexity to tax the discriminating ability, and a vast human interest to call into exercise the emotional element in human nature. History, pursued in

the light of this conception, permits the student to participate in the conscious life of the race. Any study that serves this purpose in a considerable degree is a culture subject; and any study that does not fulfil this purpose in some appreciable degree has, to this extent, lost its culture value. Now, what is true of history in general is true, in some degree, of special phases of history. It is the prerogative of educational history to exhibit the conscious efforts of the wisest and the best of the human race in behalf of their successors on the earth, the fate of the systems which they devised, and the principles which were involved in them. Here is a comprehensive aggregate, a complexity of structure, and an involution of human interests, that mark this subject as having a culture value of high grade. Historical study in general is an element of general culture; the study of educational history is an element of professional culture. My observations of teachers and schools seem to have taught me that the thing needed above all others by the teaching class is that indefinable, impalpable, but very real thing which we call culture; and I feel sure that nothing will contribute more directly or more powerfully to this end than the historical study of educational systems, methods, and doctrines.

2. What inheritance is comparable to that of an honored name derived from a long line of honorable and honored ancestry? *Noblesse oblige!* How is each generation thus constrained to preserve the family traditions and the family honor! Animated by this spirit, how easy it is to kindle a zeal that will lighten all life's burdens! Almost as potent is pride in professional ancestry. Yet how few teachers are able to avail themselves of this stimulus to noble effort! What profession can boast such

a long line of illustrious ancestry? Mark a few names that occur almost at random — Moses, Ezra, Solomon, Christ, Paul, Socrates, Plato, Aristotle, Alcuin, Comenius, Pestalozzi, Arnold. Yet it is to be feared that, to very many teachers, the most of these are unknown names. I venture to express the opinion that, in the case of the teachers who have the best opportunities for a professional education, the substitution of educational history for the highest of the higher mathematics, or for entomology, or even for some of the practice work, would be a most profitable innovation.

3. While the practical value of a subject, *i. e.*, its value for guidance, is by no means its highest claim to consideration, it is one that should be taken into careful account. I am in doubt whether this subject *has* a practical value, according to the current use of the term. We need not expect to learn from it how to stop whispering, or to prevent tardiness, or to teach subtraction, or any one of the thousand things that a teacher must know. This knowledge cannot be applied to such specific uses, but rather to uses which are general and comprehensive, such as the trend of thought on educational questions through the centuries, judicial fairness in the discussion of complex problems, wisdom in dealing with systems and methods that have once been put on trial, etc. These uses are so general that, even from this third point of view, the subject seems to have a culture value rather than a practical value. Still, out of deference to usage, let us call these high uses I have indicated practical, and say that the study of educational history should be encouraged on the score of its value for guidance. The most specific advantage to be derived from this study is the saving of time, efforts, and money in the

avoiding of experiments that experience has once condemned. By the light of this knowledge we are able to start on our own forward journey with the net results of all past educational effort as our own capital—an advantage whose importance it is not possible to estimate.

In normal schools the history of education has never occupied the important place that their projectors desired and anticipated, and we have not to go far to find the reasons for this failure. In some cases the scheme of professional instruction has been so "practical" that this unpractical subject has been eliminated from the curriculum. As I was once told by a very prominent normal-school principal, "We aim at purely practical results; a man can teach a good school without knowing anything of the history of education."

The history of education affords striking illustrations of what seems to be a very general law of human opinion—that recoil from one error is pretty sure to land us in an error of an opposite sort. That one extreme follows another is an observation almost as old as reflection itself. This law seems to be involved in the famous doctrine of *The Mean*, of which Aristotle makes so much. According to this conception, truth, in conduct or action, is the harmony of two opposing or contrary movements; and such is the weakness or the infirmity of the human mind that it can seize and comprehend only one of these two phases of truth at one and the same time. For example, strict allegiance to truth requires the constant union of the formal and the real, or of the sign and the thing signified; but there is always a tendency for the mind to be occupied with the easier of these two elements, to the neglect of the one

more difficult of comprehension. Thus, in religion, there is always a tendency to formalism; that is, to set up the symbol as an object of reverence, and so to leave out of account the verities of religion. In process of time this movement goes to such an extreme that it excites remonstrance, and then there sets in a movement back towards the simple and the real. In the sixteenth century the movement towards religious formalism reached its culmination, and then the recoil came in the name of Protestantism, and then in the name of Puritanism, of Quakerism, of Methodism, etc. The divorce of form from content, the gradual culmination of the formal, and then a recoil towards the real, is just as observable in the history of science. Just prior to the period of Socrates, for example, the current knowledge of the time had been formulated, and the vocation of the scholar was to gain possession of these specious formulas, often empty, always hollow and deceptive. This movement had gone so far that, to be counted wise, a man had need only to collect a library. Under this artificial state of things the Socratic movement began, which, in one of its main characteristics, consisted in exposing the emptiness of what passed for knowledge. During the centuries that have followed the era of Socrates this oscillation from form to content, and then from content back to form, has been a recurring phenomenon. Truth, discovered, realized, and formulated in one age, becomes the cant of the next; and then a reform movement sets in, the purpose of which is to restore to forms their historic and proper content. In illustrating this general law of the oscillation of opinion from one extreme to another, I have incidentally stated one important instance of this movement—that from form to content, from sign to thing,

and then the reverse movement from the real to the formal. An analogous case is next to be mentioned.

It appears to me that the truest statement yet made of the purpose of education is the following, by Mr. Matthew Arnold: "The ideal of a general, liberal training is to carry us to a knowledge of ourselves and the world."* The two factors in this conception are the world without and the world within; the one discovered by observation, the other by reflection. The historical fact that I wish to call attention to is, that the current of opinion has flowed first towards one of these regions of knowledge, and then, by a recoil movement, towards the other. Physical or cosmical research had occupied the attention of the philosophers who preceded Socrates. Their purpose was to account for the physical universe and to explain physical phenomena. Socrates, seeing the speciousness and inutility of these speculations, and convinced of their untruthfulness by noting the conflicting views held by those pretended wise men, directed his attention from the world without to the world within; for observation he substituted reflection; for physics, ethics. This recoil movement in human thought culminated in the age of Bacon; the period of oscillation was thus about twenty centuries. With Bacon there began a return movement towards realism, and now the pendulum of opinion has gone far back towards the pre-Socratic modes of thought. We of to-day are either promoting this recoil towards realism or physical philosophy, or are borne along in the current in spite of our resistance. The indications of fact are not to be mistaken. Object-teaching, sense-training, the culture of the

* "Higher School and Universities in Germany," p. 191.

observing powers, manual training, are positive marks; while the warfare against the classics, the discredit thrown upon metaphysics, and a relaxing of faith in ideals, and in whatever cannot be weighed and measured, are negative indications of the same fact. A prevision that seems to be warranted by this historic movement is this—the mode of thought now in the ascendant exaggerates one of the elements of a liberal training, and by so much belittles the other; a return movement may be anticipated, and finally the oscillations will practically cease, and the training in the schools will harmonize the elements that are now at variance. An indication that we are even now approaching this ideal adjustment is the fact that, in our universities and in our secondary schools, the old is granting domicile to the new, and they bid fair not only to live together in harmony, but to be mutually helpful. It is an auspicious sign of the times that a student who is construing Homer this hour is to be found in the physical laboratory the next hour. This course of events will finally lead to the ideal curriculum, which will combine in harmonious measure the formal sciences, such as logic and mathematics, the real sciences, such as physics and chemistry, and the humane sciences, such as history and literature. The almost complete divorce of the old from the new is seen in those distinct establishments known as the German Gymnasium and Real School. So far as this separation is maintained, it stands opposed to that ideal adjustment which is predicted by the historic movement of opinion. In the American high school of the first class the classical course and the scientific course are impartially administered under one management, and often there is a third course, the Latin and scientific, which is a compromise of the old and the new, and in

the end will, perhaps, serve as the basis of the final and ideal adjustment commended by Mr. Arnold. In this respect the American public-school policy is more nearly in the line of historic development than the German. In the meantime, the man of one idea will continue to lift up his voice. On the one side there will be prescribed and exclusive intellectual diet of Greek and Latin and mathematical roots, and on the other of bugs, butterflies, and botanical roots. But for ourselves and our children, we will order a mixed diet. Our sons shall be able to read the Iliad and to analyze air, earth, and water, and our daughters to read Dante and to make bread and cook a beefsteak. Our educational creed shall embrace both the trained head and the trained hand, though we will train the head first, as the best means of training the hand.

A survey of the whole historic course of human training shows that ancient education was dominated by the spirit of authority, and that in modern education the pupil has become, in theory at least, his own master. Anciently the injunction was, "Accept this as true, because I assert that it is true;" now the theory is, "Accept nothing as true unless you have verified it by your own personal experience." Here the recoil has been from tyranny to anarchy. As illustrations of these extremes, read the "Talmud" and the "Émile." The actual Jewish child was rigidly kept within the narrow circle of authority; the imaginary, though impossible, Emilius is invested from very infancy with the liberty of the universe. If the self-consciousness of Rousseau were fully awake while he was composing his educational romance, he must have laughed in his sleeve when he thought of the readers who would accept on simple trust a theory

which expressly repudiated all trust. But then it requires a dogmatist to condemn dogmatism.

Here, again, the truth lies at the mean. Authoritative teaching is right, so is free inquiry and personal examination. Man is at once dependent and independent, but the major factor in his constitution is dependence. So far as he is dependent he must rely for guidance on authority. The older conception, therefore, has the larger amount of truth in it. The older practice of the two is the wiser and the safer; but the ideal practice, freedom duly guided and tempered by authority, is better than either. The great historic movements in opinion will attain this ideal as a resultant.

Ancient education was concerned almost exclusively with accumulated knowledge, that is, with knowledge which could be acquired through the interpretation of language. We may properly and conveniently call this second-hand knowledge. The extreme modern theory is that learning is a process of discovery or of rediscovery. To employ the conceit of Rousseau, the pupil shall not learn science, but shall discover it. Throw aside books, take nothing for granted, assume that the world of knowledge is unexplored, and then rise to the comprehension of the universe by repeating the experiences of the race! This, in brief, is the latest theory of learning and teaching. Locke was unconsciously the author of it; Rousseau gave it currency by putting a bit of sentiment behind it; Condillac actually attempted to put it in practice; and Spencer has attempted, by specious sophistry, to establish it on a basis of philosophy. Mr. Bain has happily and truthfully characterized this hypothesis as a "bold fiction."* As to the disuse of

* "Education as a Science," p. 94.

books, let it be recollected that there is some knowledge, as of history, the reproduction of which without the aid of books is inconceivable. There is other knowledge, the reproduction of which, without the aid of books, though conceivable, is practically impossible in the lifetime of any one individual. Natural science and geography are examples of this. The impossibility lies in the fact that much of the material to be studied is inaccessible to any one mind. There is a third class of subjects, distinguished by the fact that all the material is in the personal possession of each mind, such as logic, metaphysics, mathematics, and ethics. Science, as Socrates understood it, was ethics, and so he was right in his definition of the ideal teaching, that it consisted in leading a pupil to formulate his own knowledge, or in assisting him in the birth of ideas. A French writer has described Socratic teaching as "L'accouchement d'une âme." If we will recollect that what is practicable in ethics is inconceivable in history, and barely possible in science, we need have no difficulty in determining the place of books in the work of instruction. I interpret the outcry against the use of books as a recoil from the old-time misuse of books. The crusade will do good if it guards us against the old error, but is most likely to do great harm, by leading us into a still more dangerous error. Some earnest men have been betrayed into a condemnation of books through a misconception of Socratic teaching. The true reformer will not stultify himself by preaching the abolition of text-books, but will the rather teach us the right use of books. The law of progress is inheritance supplemented by acquisition; and as the volume of capitalized knowledge swells in bulk from age to age, the importance of books will increase

from age to age. The most of our knowledge we must receive at second-hand; the most of the science that we learn we must learn as literature and not experimentally; and it is questionable whether, for the ends of culture, second-hand knowledge is not better than first-hand knowledge. For practical or professional uses, physiology should, no doubt, be learned in the dissecting-room and in the physiological laboratory; but for the purposes of general culture it should be learned from books. Plato estimated the importance of studies chiefly on the basis of their disciplinary or culture value. His repugnance to practical studies, or, rather, to studies pursued for purely practical ends, may have been an instinct, but his preference was well founded. Any study consciously learned for practical ends has but slight culture value. This is one of the main reasons why a man should be liberally educated before he learns a profession, and also why it is unwise to pursue a general and a technical course of training simultaneously.

If we give the term "Church" its wider signification, the statement in the "Dictionnaire de Pédagogie" (article "Confessionnelles") is certainly true: "Historiquement l'école a été dans tous les pays la fille de l'église." The first formal teaching was religious, and the first schools were connected with places of religious worship. The hieratic or priestly class was the first educated class, and the early schools were necessarily confessional. The historical union of Church and school dates back from time immemorial, and the religious imprint left on education has been well-nigh ineffaceable. It is neither my duty nor my purpose, at this time, to discuss the effects, good and bad, of this domination of education by the Church; but rather to point out certain historical facts,

and thus to discover the trend of human opinion. Human opinion, in the aggregate, is a resistless force; it is slow to start, its motion can be discerned only from the vantage-ground of centuries, but it crushes the luckless system that presumes to arrest its progress. It is well said of some things that they come in the fulness of time. Their coming cannot be perceptibly hastened by the set purposes of men; but, when they do come, they have come to stay till their destined mission is fulfilled. And their exit is never sudden. Slow transition is the law of progress. "He must increase, but I must decrease," is a typical description of all forms of progress. The final sentence may have been made up against the thing that *is*, but it will not vacate at once for the thing that *is to be*. The old life wanes in the same degree that the new life waxes. The ancient domination of the school by the Church, and the modern domination of the school by the State, is a large illustration of the historic phenomenon I have tried to point out. During the later Christian centuries church control of education has been gradually waning, and, during the same period, state control of education has been as gradually waxing. The unmistakable progress of human opinion is irresistibly towards what French educators call *Laicité*, or the secularization of the school. In France, secularization is complete and actual; in England it is partial; in the United States it is established in theory, though the theory is not wholly supported by practice. The conception of state control of education is very old; it is only its domination that is new. The first appearance of this conception was in Persia—at least, prior to the time of Cyrus; it was actually dominant in Sparta in the time of Lycurgus. During the Middle Age the lesson seems

to have been forgotten; but the thought reappeared at the Renaissance, and to-day, throughout the whole world, save in the few countries where the State is dominated by the Church, secularization is fairly in the ascendant.

The historical union of Church and school has led to some consequences that are deserving of note. As the primary concern of the Church is conduct and character, so the matter of instruction in the church-school was religious, ethical, or prudential. All the ancient systems of education agree in this respect. The Indian, the Persian, the Egyptian, the Jew, the Chinaman, were taught, above all things, their duties to their superiors, celestial and terrestrial. The teaching of Socrates was purely ethical, and that of Plato and Aristotle mainly so. The preoccupation of all these eminent teachers was justice; the conduct of the young was to be brought into the most perfect conformity with the law of right. The kind of training next in importance was physical; the body must be brought and kept under a systematic regimen as the essential condition of mental soundness. The kind of instruction lowest in esteem was what we denominate practical. Plato, as previously observed, would make the study of arithmetic compulsory, but almost solely on the ground of its disciplinary, or, as we would say, its culture, value. In modern education this sequence has been virtually reversed. The main preoccupation of the modern school is intellectual training and the gaining of useful knowledge; next come religious, ethical, and prudential knowledge and training; and, lastly, physical. The general causes that have operated to change the great aims of education may be noted in the sequel.

The general character of ancient education being re-

ligious or ethical, it is plain that all instruction was based on authority. The truth to be taught was embodied in revelations from heaven, or in the precepts of men. In either case the knowledge was accessible only through the interpretation of language. We may express this general fact by saying that, as to its mode, ancient education was almost purely literary. The art of the scholar consisted in the interpretation of books. The degree to which the book has now lost its ancient ascendency need not be pointed out, though it is well to dwell for a moment on the general cause of this change. It lies in the fact that the reign of authority has been broken, and that learning is now conceived to be a process of discovery or of rediscovery. What need is there of books when it is assumed that each individual must be educated just as the race was educated historically?

As ancient education was mainly literary, instruction must have been based on memory. The truth was embodied in words, and it was very easy to form the conception that the readiest way to lodge the truth in the soul was to lodge the formal expression of it in the memory. In addition to this, in all religious instruction, the form of the expression was almost as sacred as the truth expressed. Hence the very language of the text must be learned.* From these two circumstances learn-

* "The Rabbins required of their pupils a faithful memory, and that they should add nothing to the matter which had been taught them. It was a saying among these teachers, that 'he who forgets parts of what he has learned causes his own destruction.' 'It is the duty of each one to teach with the very words used by his master;' and the highest praise that could be spoken of a disciple was this: 'he is like a cistern plastered with cement, that does not let a drop of water escape.' This extreme solicitude enables us to understand how the disciples of Jesus could retain in

ing became nearly synonymous with memorizing. In modern times, as knowledge has lost much of its sacred character, and as education has become only in part literary, the office of memory has fallen into discredit. The function of this faculty is certainly not so absolute as in the ancient day, nor so limited as the modern extremist asserts. Its proper use is indicated by the composition of our education, made up, as it seems to me it should be, of three parts of second-hand knowledge to one part of first-hand knowledge. Those who would mix the ingredients in a different proportion will, of course, assign a correspondingly different value to the memorizing process. In this connection there is one thing that should be carefully noted. The history of education has shown that memory is the conservative faculty. By this expression I do not mean that knowledge and intellectual progress are assured to the individual mind through the agency of this faculty, though this, of course, is true; but that national stability has been secured through systems of instruction based on the exact memorizing of religious, ethical, prudential, and legal precepts. The most conservative and the most stable nation on earth is the Chinese, and it is not a mere coincidence that the education of this people from time immemorial has been based on a rigid process of memorizing. Under such a system of instruction, continued through centuries, education becomes fate, the potency of ideas becomes absolute. Of course, the bad side of this system is very apparent. The conservatism is so ingrained that it is an effectual bar to progress. There

memory his instructions, and report them to us with such astonishing fidelity."—Edmond Stapfer, "La Palestine au Temps de Jésus-Christ" (Paris, 1885), pp. 293, 294.

is scarcely a doubt that if the modern *laissez faire* system were to dominate in the schools of China, national disintegration would set in after only a few generations. For a time, hereditary conservatism would withstand the solvent of the "new education." A more striking illustration, if possible, of national conservation through an education based on memory, is the history of the Jewish race, that nation without a country. The bond of ligation is a powerful one—a rigid monotheistic faith; but this faith has been made a vital, universal bond of nationality by the very incorporation of the Law into the Jewish race through immemorial memorizing. The most ancient education of the Roman consisted almost exclusively in the verbal memorizing of the Twelve Tables, and there can scarcely be a doubt that the Roman VIRTUS was the direct consequence of this mode of education. Much of the flippant disparagement of memory would cease if the subject could be viewed in the light of historic results. Who can doubt that the stability of the Roman Church lies in the memorizing of a rigid creed? Who can doubt that the weakness of many Protestant churches lies in a lax memorizing of creed? A universal weakness of Sabbath-school instruction is well-intended talk *about* the Scriptures, instead of an unfolding of Scripture that has first been memorized. If we conceive that one chief function of the American public school is to furnish the nation with successive generations of men and women fit for the high duties of American citizenship, ought not both the letter and the spirit of the Constitution to be impressed on the souls of our youth somewhat as the Twelve Tables were impressed on the souls of Roman youths?*

* "That which contributes most to preserve the State is to edu-

Another general lesson taught by this historical survey is that education has always been moulded in accordance with political or religious needs; that is, the school, instead of dominating the State and the Church, has been dominated by them. For example, Phœnicia was devoted to traffic, and so the art of computation was made a staple of instruction in her schools. The small states of Greece, exposed to the ever-present dangers of invasion, had need of a brave and hardy soldiery; and so gymnastic training of the military type was enjoined on all Grecian youth. Egypt was pervaded by the spirit of caste, and so the purpose of instruction was to prepare the son for following the occupation of his father. The preoccupation of the Jew was the maintenance of the sacred traditions, and so instruction became a careful process of indoctrination. The Reformation, by throwing on each human being the burden of his own salvation, made it necessary that every child should know how to read; and, to meet this necessity, schools were multiplied till all had an opportunity to learn to read. In cases where state needs were felt to be urgent, and where there was not a prompt response to the public call, there was a resort to compulsion, as in ancient Sparta, and, in a measure, among the Jews, as well as in most European states of the present day. We may generalize these facts and say that the prevailing type of education during the whole historic period has been technical or professional, its purpose being to equip men for service as agents or instruments. Side by side with

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cate children with reference to the State; for the most useful laws . . . will be of no service if the citizens are not accustomed to and brought up in the principles of the constitution."—Aristotle, "Politics," v., 9.

this narrow conception of education there has at times appeared the wider conception of education as a process by which a human being is to be wrought into the likeness of the highest type of his kind. I believe this conception appeared for the first time in Greece in the fifth century B.C. Plato had such an exalted conception of the State, and of the qualifications needed for full citizenship, that, in his scheme of training, technical education and liberal education became essentially one and the same. To be a citizen of the *Republic* was to be a man in the fullest sense of that term as then understood. These two conceptions, the narrower and the wider, of man as an instrument destined never to transcend his environment, and of man free to transcend his environment, in obedience to his natural aspirations towards the highest type of his kind, have descended to our day, and their struggle for supremacy is involved in most of the educational polemics of the times. On this subject three opinions are held: 1st. That education is to be of the technical type, the school being a place for acquiring a trade. 2d. That education is to be of the liberal type, the purpose of the school being a general intellectual training. 3d. That the ideal education is first general or liberal, and then special or technical, or that the best type of the human instrument is to be made out of the best type of man.

From the vantage-ground we have now gained, it appears that the history of education exhibits a series of contrasts; that, in the ancient period, certain factors in the educating process were brought into such prominence as to obscure other factors; and that, in the modern period, by a natural law of reaction, these neglected factors assume the first place, while the prominent factors of the

older system suffer a greater or less degree of obscurity. This period of oscillation, or the interval between these culminating points, is measured by centuries. We can say, with historical exactness, that the old system of education culminated at about the time of the Reformation, and that the present order of things took its rise at the same period. To these two contrasted systems, thus defined, have been given the distinctive titles the Old and the New Education. This description is significant and just. The term "New Education" has sometimes been given to scientific training as opposed to classical training. But scientific training is not even the half of an education. In a still more limited sense, this term has been applied to kindergarten training; but, at its very best, this is scarcely more than the beginning of an education.

To these statements I must add two observations: 1. The comprehensive study of the history of education will save us from the conceit of thinking that we are to look for much that is new in principle. M. Compayré, after his survey of this subject, speaks as follows: "The most of the essential elements which compose the art of human education have long since been brought to light, and the first duty of a modern teacher is to begin by carefully collating the recorded results of the past centuries of effort."

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* "Histoire de la Pedagogie."

CHAPTER XII.

THE SECULARIZATION OF THE SCHOOL.

The great French Dictionary of Pedagogy, now in process of publication, makes this apology for the title of one of its leading articles: "The word *Laicité* is new, and, though correctly formed, is not yet in general use. However, the neologism is necessary, because we have no other term that can express, without paraphrase, the same idea in its full signification."

In the discussion of this subject my purpose has been, not to defend a favorite opinion, but to interpret the spirit of modern legislation as it affects the status of the public school. Indeed, the logic of facts has led to a conclusion that is somewhat repugnant to my feelings, and entirely in opposition to my practice while engaged in the public-school service.

Education is every year becoming more and more a political question; and in what follows I shall attempt to present, in a summary manner, the general drift of national legislation as it affects the public school. For much of the information contained in this chapter I am indebted to Buisson's "Dictionnaire de Pédagogie."

By the secularization of the school, I mean its emancipation from the Church, and its adoption and maintenance by the State; and my purpose is to show the causes and the consequences of this historical movement. The present status of the school is neither an accident nor the result of deliberate forethought, but is one of

the products of the resistless march of civilization. The movement I am to describe is but one, and that one the latest, of a series of cognate movements, that are also the concomitants of civilization. Progress, in one of its most characteristic phases, is a differentiation and specialization of functions. In a rude state of society, many offices are conjoined in one person; an artisan practises several crafts, a tradesman sells many different sorts of goods; but an invariable and unmistakable characteristic of progress is a division of labor, whereby each hand and each mind is allowed to do that for which it has the greatest aptitude.

In his "History of Rationalism in Europe," Mr. Lecky devotes a chapter to the "Secularization of Politics," in which he traces the gradual emancipation of politics from ecclesiastical control. This account carries us back to that period in our civilization when the Church and the State were virtually one, when the legislative, executive, and judicial functions were exercised in the name and by the authority of the Church. We have not to go far back in the world's history to find Rome the capital of the world, and the nominal sovereigns of Europe the real vassals of the Roman Pontiff. Kings ruled by divine right, and ecclesiastics, simply because they were ecclesiastics, held a place in legislative councils. How this domination of the church in civil affairs has been weakened and broken need not be pointed out in detail. We are told* that, "in the reign of Henry III., in the thirteenth century, the spiritual peers formed one half of the House of Lords; at the beginning of the eighteenth century, they were only one eighth; and at the present time are only one fourteenth; while the propriety of

* Hinsdale, "Schools and Studies" (Boston, 1884), p. 233.

excluding them from the chamber altogether has been seriously proposed, and probably is not far distant. In tracing the decline of the power of the English clergy, Mr. Buckle says: 'Since the seventeenth century there has been no instance of any ecclesiastic being made Lord Chancellor; and since the beginning of the eighteenth century there has been no instance of one receiving any diplomatic appointment, or, indeed, holding any important office in the state.'* Nor has any clergyman, at least of the Established Church, sat in the House of Commons since 1801."†

Two things are to be noted in passing: 1. The secularization of politics is the result of a growth, and is thus an exponent of progress. It is Mackintosh, I think, who is credited with the saying, that "constitutions are not *made*, but *grow*." In a similar manner, this differentiation of functions has come in the fulness of time, and not through accident or caprice.

2. In the second place, there is scarcely a possibility, certainly not the least probability, that there will ever be a return to ecclesiastical domination in politics. In the past, it may have been best that civil rulers should be subject to the authority of the Church; but in the present, it is undoubtedly best that ecclesiastics should not be allowed to dominate in the affairs of State. But whether best or not, the lay state is a fact beyond recall, and the Church must adjust itself to the established order of things.

I use the term Church in a comprehensive sense, to

* "History of Civilization in England," vol. i., pp. 299, 300.

† From a late number of the *Educational Times* (London), it appears that "in the year 1861 the percentage of lay masters at Eton, Harrow, and Rugby was respectively 24, 26, and 5, and at present (April, 1884) the percentages are 65, 85, and 71."

designate "the organized aggregate of religious influences in a community;* and in this sense the Church was once the dominant power in every line of human activity—in science, in art, in war, in politics, in education, in everything. "In a very primitive period of the history of civilization," says Jardine,† "in Egypt, in Babylon, and in India, the sculptor's art was employed in the representation of the national ideas of the deity." "Music, like the other fine arts, was originally enlisted in the service of religion." "The art of architecture originated in an attempt to beautify and adorn the temples of religion in the houses of the wealthy."

"Historically," says Buisson,‡ "the school has been in all countries the daughter of the Church; and so, at first, every school was necessarily conducted under religious auspices."

We need not go far to account for this historical domination of the Church. The Church was dominant because it was powerful, and it was powerful because it was wise. Anciently, and as far down as the Middle Age, the sacerdotal class held the monopoly of learning, and, in consequence of this, they held the monopoly of power and privilege.

Let us now turn for a moment to consider the causes of that partition of functions which is such a characteristic fact of modern times. Principally they are the following: 1. The secularization of learning. This secularization took place in two ways: learning gradually lost its hieratic character, or was gradually extended to what we term secular subjects, such as history, physics,

* Webster.

† Jardine, "Elements of Psychology" (London, 1874), pp. 176–178.

‡ "Dictionnaire de Pédagogie," article "Confessionnelles."

and astronomy; and, in the second place, men outside of the sacerdotal class applied themselves to learning, and so broke down this monopoly. In other words, at this remote period there was but one profession, but this was all-comprehensive, that of scholar; the scholar was priest, legislator, physician, teacher, artist; but when men not belonging to the priestly class became scholars, they set up for themselves, some as physicians, others as politicians, and so on.

2. A co-operating cause in this partition of functions was the principle of the division of labor. The specialization of vocations that began in a diffusion of learning was nurtured and fixed by the need of following those restricted lines of activity that accord with individual predilections. The observation already made with reference to the permanent separation of politics from religion may now be extended to all the specialized functions—in each case the separation is final; it is not supposable that there will ever be a return towards that primitive state out of which these diversified industries have sprung. On the contrary, the current of progress is steadily towards a specialization of growing minuteness, farther and farther from the old-time simplicity.

Another general fact deserves mention because of its bearing on an educational doctrine of great importance. Before a marked division of labor has taken place, all varieties of practical knowledge are of co-ordinate importance; that is, each man must learn the several arts that in turn occupy his attention. When, however, a man becomes restricted to one art instead of four, three varieties of knowledge lose their primary value, for the division of labor now permits him to participate in their advantages at second hand.

Within the memory of this generation, the arts of carding, spinning, weaving, and dyeing had a primary value to the housewife; but now she does not need to know these arts, for she participates in their benefits at second hand. It is not possible to estimate the absolute value of medical science; but it does not follow that all scholars should study medicine. The ninety and nine who are ignorant of medicine may still share in the full value of this variety of knowledge. By permitting us to be ignorant of four different arts, the division of labor allows us to know four times as much about our own art.

Returning now to the special subject under consideration, it is to be noted that educating is the last important prerogative that the Church has surrendered; or, more truly it might be said, that the last parley is now in progress that precedes this final surrender. To the two main causes of the specialization of functions, viz., the secularization of knowledge and the division of labor, we must, in this case, note a third, the diversity of sects or of religious creeds. If the mediæval uniformity in religious belief had descended to this day, it is probable that education would still be administered by the Church. It is still more probable that if this uniform belief were a state religion, education would still be a function of the Church.

As a matter of fact, the primitive system, or that which holds the public school under formal religious supervision, is still maintained in the following countries: Spain, Portugal, Greece, Denmark, Sweden and Norway, and in some of the small German states.

In Spain, all the public schools are conducted under the religious sanctions of the Roman Catholic Church;

though other denominations may be authorized to establish private schools. In Portugal, the public schools are exclusively Roman Catholic, as in Spain. In Greece, the public school is under the control of the Greek Church, and the religious instruction is given by the teacher. In the rare cases where parents belong to a different communion, they may have religious instruction given to their children separately, at their own expense. In Denmark, in a few localities, there are schools for dissenters, maintained at their own expense. All the public schools are subject to the state Church, the Lutheran Evangelical. The children of dissenters who may attend the public schools are excused from the religious instruction. In Sweden and Norway, public instruction is supervised by the state Church, and the clergy make frequent visits to the schools in order to give teachers necessary instruction and advice.

Passing now to what we may call the modern system, or that which relieves the public school from all formal religious sanctions, we find the neutral school in the following countries: Holland, France, Belgium, the United States, and Canada. In Holland, the law of August 13, 1857 (article 23), prescribes as follows: "The teacher shall refrain from teaching anything which may show a lack of respect due to the religious opinions of others. Religious instruction is left to the denominational bodies, and schoolrooms shall be at their disposal for this purpose, outside of school hours. Private schools assisted by public funds must receive pupils without distinction of sect."

In Switzerland it is declared by the federal constitution of 1874 (article 77), that attendance in the public schools shall be open to pupils of all religious denomina-

tions without any infringement in rights of conscience; and that the Confederation shall take the necessary measures against any canton which does not respect this regulation.

In Austria, the law of 1869 declares that every primary school assisted by public funds is a public institution, and as such is open to children without distinction of sect.

In Belgium,* the law of 1878 states that religious instruction is left to the care of families and ministers of the various denominations; but that a room in the school may be used for instruction in religion, either before or after school hours.

In England, parliamentary aid is refused to schools connected with a religious denomination, and religious instruction is forbidden in schools receiving state aid.

In Scotland, every school, public or private, receiving state aid, must admit pupils without distinction of sect.

The most decisive legislative movement yet made in favor of the absolute secularization of the school was accomplished in France in 1882. By this act, not only is public instruction absolutely relieved from church control, but even authorized religious congregations† are

* With the late triumph of the ecclesiastical party in Belgium, the schools have again come under the control of the Church.

† "Religious congregations devoted to teaching are of two classes: (1) those that are authorized, and have thus received from the government a legal existence; and (2) those that are unauthorized, having no legal existence. At the close of the year 1878 there were 24 authorized religious congregations of men devoted to teaching, and they had charge of 3096 schools. There were 528 authorized religious congregations of women, having charge of 16,478 schools. There were at the same time 385 unauthorized congregations of men, 85 of which were devoted to teaching; and 602 unauthorized

forbidden to teach, and all religious instruction is struck from the school programme.

In his "Dictionnaire de Pédagogie" (1ere partie, p. 1469), M. Buisson speaks of this movement as follows: "Laicity, or the neutrality of the school in all its grades, is but the application to the school of a rule that has prevailed in all our social institutions. Like most peoples, we have advanced from a state of things which consisted essentially in the confusion of all powers and of all domains, in the subordination of all authorities to one sole authority, that of religion. It is only through the slow labor of centuries that the several functions of public life have been gradually distinguished, separated from one another, and emancipated from the rigid tutelage of the Church.

"The stress of affairs brought about the secularization of the army at a very early date; then that of administrative and civil functions, and, finally, that of justice. Every state that does not choose to remain purely theocratic is soon obliged to constitute as forces distinct from the Church, if not independent and sovereign, the three powers, legislative, executive, and judicial. But secularization is not complete as long as over each of these powers or over the whole of life, public and private, the clergy preserves a right of interference, of supervision, of control, or of veto. Such was exactly the situation of French society up to the declaration of the rights of man. The French Revolution made appear for the first time, in all its definiteness, the conception of the lay state, of the state neutral among all creeds, independent of all

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congregations of women, of which about 260 were devoted to teaching."—"Dictionnaire de Pédagogie," article "Congrégations."

ecclesiastical authorities, and free from all theological bias.

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"Only one domain had as yet escaped this transformation; this was public instruction, or, rather, primary instruction; for the higher instruction had long been free from church control, and only boarders in secondary schools were held to religious instruction. But primary instruction remained essentially confessional. Not only must the school give formal dogmatic instruction in religion, but teachers, pupils, programmes, methods, books, rules, everything, in fact, was placed under the inspection or under the direction of religious authorities."

In the application of this French law of 1882 two serious questions have arisen: 1. While the unauthorized religious congregations in their collective capacity are enjoined from teaching, may individual members of such congregations be employed in the public-school service? The reply is, that if such teachers lay aside all their ecclesiastical functions while engaged in their school duties, they may be employed in the service. The general principle is this: "The teacher for the school, the priest for the church, the mayor for the town."

2. In the second place, must the instruction become, as the English say, "colorless"? While abandoning dogmatic religious instruction, must the schools eliminate all moral teaching and thus become "godless"? This is the reply from the Minister of Instruction: "The teacher's mission with respect to moral and religious instruction is very clearly defined. It consists in fortifying and implanting in the souls of his pupils, for life, by daily practice and habit, the essential notions of human morality, common to all creeds and necessary to all civil-

ized men. The teacher can fulfil this mission without making personal assent or objection to any of the different religious beliefs with which his pupils associate and mingle the general principles of morality. He takes these children just as they come to him, with their ideas and their languages, with the beliefs which they derive from the family, and he has no duty but to teach them to draw from these beliefs what they contain that is most valuable from a social point of view, that is, the precepts of a high morality."*

This case of France deserves our marked attention, because it is the clearest example now on record of the absolute secularization of public instruction. Speaking of this legislation the *République Française* of March 25, 1882, says: "The system of instruction just established by vote of the senate is without exception the most liberal that exists in the civilized world. It is the most modern, the best adapted to the inspirations as well as to the needs of a great nation emancipated from the yoke of theology. Neither Switzerland, nor Holland, nor Protestant Germany, nor Republican America has anything to offer which can be compared with our primary national instruction. At a single bound, France, which was behind the times, has just placed herself at the head of nations."†

And Mundella, in an association of teachers at Sheffield, is reported to have said: "I have just read the last French law on instruction. It is the grandest act—I was going to say, the most wonderful law—that there has ever been in the history of education in the whole world."†

The American public school is not neutral in the sense

* "Dictionnaire de Pédagogie," p. 1473. † Ibid., p. 1090.

or to the degree that the French public school is neutral. True, there is no direct church interference in the matter of teachers, books, programmes, etc.; nor is any special religious doctrine obtruded upon the public schools; still, there is no doubt that in a majority of cases these schools are conducted under some form of religious sanction, such as the reading of the Bible, or the offering of prayer. In most cases this matter lies in the discretion of the teacher. Except in a few cases, there is no positive legislation either for or against religious exercises in connection with public schools. I note the following cases as reported by Francis Adams in his "Free School System of the United States:" *

In Massachusetts it is the duty of the school committee "to require the daily reading of some portion of the Bible in the common English version." However, there is a conscience clause for children whose parents object to this reading from the Bible.

The law of New Jersey rules out "any religious service, ceremony, or forms whatsoever, except reading the Bible and repeating the Lord's Prayer."

The law of New York, while prohibiting sectarian religious instruction, expressly forbids boards of education to exclude the Holy Scriptures, without note or comment, or any selections therefrom, from any of the schools provided for in this act. Nor shall boards determine what version, if any, of the Holy Scriptures shall be used.

The law of Iowa "forbids the exclusion of the Bible from the public schools," but has a conscience clause, as in Massachusetts.

The law of Indiana says: "The Bible shall not be excluded from the public schools of the state."

* London, 1875.

The law of Illinois permits the use of the Bible in the public schools.

So far as state legislation is concerned, I note but one case, that of Massachusetts, in which the reading of the Bible is commanded. In all other cases the use of the Bible in public schools seems to be optional with boards and teachers. For example, the law of Ohio makes no provision respecting religious instruction; and the Supreme Court of that state sustains the action of the board of education in Cincinnati in excluding the Bible from the public schools of that city.

Having now noted the two extreme modes of school administration—the primitive system of religious domination, and the modern system of neutrality, more or less perfect—I come to speak of what may be called the mixed system, which really makes the transition from the ancient to the modern. According to this system, communities may establish neutral schools in which there is neither religious instruction nor ceremonial; or, when this is not done, the confessional school must be open to all pupils without reference to sect. Thus, in Prussia, the public elementary schools are open to all children without distinction of sect. A public school may have a confessional character, but it must still admit pupils of other confessions. A minority cannot require the district to establish a school to accommodate their own religious preferences. In the main, the schools of Bavaria, Baden, Italy, and Russia are to be included in this mixed system.

The three systems now named are not separated by sharply drawn lines. The two extremes, as in the case of Spain and France, are sharply defined; but in several cases it is difficult to say more than that a transition is in progress towards secularization.

Some general conclusions, that seem to be justified by the facts I have presented, will conclude this discussion.

1. Education has become, or is rapidly becoming, a function of the State. This is another way of saying that the Church has lost, or is rapidly losing, one of its ancient and most highly prized prerogatives. And still more, this prerogative, when once lost, is lost absolutely without hope of recovery. Save in the few countries I have named, the school has been virtually emancipated from ecclesiastical control. Denominational schools may still be maintained, but they are maintained on sufferance; for the moment they should, through any misdirection, menace the prosperity of the State, they would doubtless be suppressed, as in France.

The State must be an educator as a measure of self-protection. It has come to be a well-settled conviction that there is some necessary connection between ignorance and vice, and between intelligence and good citizenship; and so the State administers education as it does other interests of a general and public nature.

2. With the State as an educator, the school becomes a civil institution, and, as such, it must abandon religious instruction, which must be relegated to the family and the Church.

The public school must teach morality, because morality is an element of good citizenship, and its cardinal principles are universally accepted, so that to teach them is no violation of religious liberty; but it may not teach religion, or, rather, may not require pupils to receive instruction in religion. This logical consequence of the secularization of the school is distasteful to many sincere religionists. It is felt that the education that is not given under religious sanction is dangerous, perhaps

worse than ignorance. Or, as I once heard it expressed by a fervent orator, "the school that does not teach its pupils to remember God teaches them to forget God;" his meaning being that if a school does not aim at making the young religious, it will make them irreligious; or, generally, that not doing a certain thing is equivalent to doing the opposite thing. But while only a few will be found to defend this ultra position, there are very many who *feel* that education, unless administered under formal religious sanctions, is full of peril.

Two considerations should reconcile us to the impending status of the public school: First, it is inevitable, and we must adjust ourselves to an order of things that cannot be successfully resisted. Secondly, the family and the Church must magnify their office, and must more faithfully administer a prerogative that they should never think of delegating.

3. In the United States there is a reason why the public school has always retained something of a religious character, and, at the same time, a reason why the public school should be simply a civil institution, conducted without religious form or ceremony. Our public-school system was founded by men of intense religious convictions, who believed that religion was an essential part of a citizen's education; and so, in New England, we find the custom of opening the school with some religious services still generally observed. On the other hand, the genius of our institutions seems to require that our public school should be purely a lay institution. In Cooley's "Constitutional Limitations," we find that the "compulsory support, by taxation or otherwise, of religious instruction," is named as one of "those things which are not lawful under any of the American constitutions."

He says: "Not only is no one denomination to be favored at the expense of the rest, but all support of religious instruction must be entirely voluntary." And again: "Whatever establishes a distinction against one class or sect is, to the extent to which the distinction operates unfavorably, a persecution; and, if based on religious grounds, is a religious persecution." *

If this general doctrine is correct, and the term "religious instruction" is construed in a comprehensive sense, it follows that the American public school should not only be unsectarian, but should be absolutely neutral as to religious bias. This may be called the theoretical or strictly legal status of the school. Practically, the public school has, and probably will long have, a quasi-religious character. Where the school may be opened with the reading of the Bible and the repetition of the Lord's Prayer, without dissent or protest, it is well; but wherever this is done in defiance of protest on the part of pupils or their parents, the school should become neutral. The practice of giving religious instruction to pupils out of school hours, or on the school premises, would, on the doctrine quoted from Judge Cooley, be unconstitutional.

In this connection, what is known as "the religious difficulty" deserves a passing notice. If the American public school were to be made absolutely neutral, would its position be satisfactory to the Roman Catholics? On the occasion of the exclusion of the Bible from the public schools of Cincinnati, the New York *Tablet* used this language: "The school board of Cincinnati have voted, we see from the papers, to exclude the Bible and all relig-

* Quoted from the "Free-School System of the United States." By F. Adams.

ious instruction from the public schools of the city. If this has been done with a view to reconciling the Catholics to the common-school system, its purpose will not be realized. It does not meet, or in any degree lessen, our objection to the public-school system, and only proves the impracticability of that system in a mixed community of Catholics and Protestants; for it proves that the schools must, to be sustained, become thoroughly godless. But, to us, godless schools are still less acceptable than sectarian schools, and we object less to the reading of King James's Bible, even in the schools, than we do to the exclusion of all religious instruction. American Protestantism of the orthodox stamp is far less evil than German infidelity."

The perfect neutrality of the school is not to be urged as a concession to the Roman Church, but solely on the ground of judicial fairness and constitutional right. If the Catholic will not accept the public school, either with or without the Bible, he is at perfect liberty to patronize the Church school. The thing he really wants will doubtless never be granted, a division of the school fund for the benefit of his parish school.

Opposition to the State, or neutral, school does not come from the Catholic alone. Some Protestant bodies have been almost as vehement in their antagonism. Between these two cases, however, there is this curious difference: the Catholic will send his children to the higher public schools, but will not allow them to receive their early instruction in our primary schools; while Protestants universally, so far as I know, patronize our lower schools, but would conduct the higher education of their children in their denominational colleges. There is, doubtless, a sincere belief, on the part of some Protes-

tants, that the higher education, as administered by the State, is dangerous; but, in some cases, it is only too evident that a state institution is believed to be a dangerous rival. The Catholic wants a share of the public-school fund for the relief of his Church school; while the Protestant wants to draw recruits into his denominational college from institutions for the higher education, supported by the State.

To conclude: the manifest tendency of the times is towards the secularization of the school. The modern State has become an educator, and relegates religious instruction to the family and the Church.

CHAPTER XIII.

TEACHING AS A TRADE AND AS A PROFESSION.

The good and wise Martin Luther said: "If I were not a preacher, I would be a teacher; indeed, I do not know which is the better." The preacher is an ethical teacher, an expositor of divine truth; the teacher is an expositor of worldly wisdom, a preacher of literary and scientific truth. Both are illuminators and guides. In the hand of each is a torch; each is a standard-bearer; and both are leaders in that grand forward movement we call civilization. In this connection there is another saying of Luther's which will explain the one first quoted. "It is hard," he says, "to make old dogs obedient, or old scoundrels pious; but young trees are more easily bent and trained." And our own Horace Mann, who preached on educational reform in New England a half-century ago, expressed the same thought when he said: "They (the clergy) are reformers, I admit; but, with reference to anything that grows, one right former is worth a thousand reformers." The thought, then, in the mind of Luther and of Horace Mann, was this: the teacher is a former, while the preacher is chiefly a reformer; it is better to form rightly than to labor at reforming. A perennial question for discussion is this: "How may the teacher become a right former?" "Of what spirit shall he be so that his work shall be the least likely to need reforming?"

"Teaching," says Mr. Fitch, "is the noblest of all

professions, but it is the sorriest of trades." * My purpose in this chapter is to illustrate this brief text, and to bring into view the professional aspect of teaching, and also the course that must be followed if we would secure to the teaching art the privileges and the prerogatives that are usually associated with the professions.

This discussion has special reference to the education that is given in normal schools. The general purpose that carries young men to schools of theology, medicine, and law, calls others to normal schools. In purpose, such students set themselves apart for a special vocation of great difficulty and of the gravest importance. The very fact that they patronize such schools is proof that, in a very true sense, they contemplate becoming state officials; that they will by and by assume grave public duties, and will be paid for their services, in part, from the public treasury. By the founding and maintenance of these normal schools the State purposes to give to a select body of teachers a professional education; and, on their part, in accepting these proffered advantages, these teachers virtually become parties to a contract, whereby they agree to give to the State the benefits of a professional training. It is of the utmost importance, therefore, to themselves and to the commonwealth, that those who are thus specially educated become professional teachers in the highest and truest sense of this term. In the quotation I have borrowed from Mr. Fitch, trade and profession are contrasted terms. In all times and in all countries, teaching has been, for the most part, a trade; but the spirit of this age is now calling the teacher to a higher plane of thinking and acting. Each step in civilization requires that men should work with sharper

* Fitch, "Lectures on Teaching," p. 25.

tools. From age to age men must work more rapidly and more surely. The sailing-vessel once answered very well for transatlantic communication, and the stage-coach for trans-continental travel; but this new age requires an ocean steamer that will pass from continent to continent within seven days, and a rail-car that will take us across the continent almost at the rate at which a bird can fly. In my boyhood I read, in the weekly paper, "Three weeks later from Europe;" but now we may read in our daily, European news not three hours old. Clumsy hand-work sufficed for the ancient world, and for the lower stages of civilization; but now, head-work has come to the front. Hand-work must still be done, but the hand must be inspired and guided by the head. Ponderous agents were first enlisted in man's service, and were made to minister to his pleasures and his needs; but this new world in which we live, this world that has been transformed by human art, is moved by imponderable agents, heat and electricity. Anciently, all men were artisans; they worked with their hands from imitation and by rule. Now, the very elect of the world's workers are artists; they toil with their brains from inspiration and by principle.

Whereunto shall we liken a profession? To an enclosed and fortified camp, into which no one can gain admittance without giving the countersign. What is the condition for gaining admittance to the three typical professions, law, medicine, and theology? It is the possession of a specific body of knowledge, difficult of attainment, scientific in character, and necessary for fulfilling the peculiar duties required of the professional membership. Let us examine the marks of what I will venture to call professional knowledge, that knowledge

without which no one will be admitted to that close corporation or guild known as a profession. First, it is knowledge of a specific kind, such as people in general do not possess. In the matter of general scholarship, lawyers, doctors, and clergymen are simply on a par with the well-educated of every class; they belong to the genus scholar, and are defined by adding a specific difference. This specific difference is the peculiar knowledge I have mentioned. To make my meaning clearer, let me illustrate: a square is a rectangle; and we define a square by adding to the conception *rectangle* the specific difference *equilateral*, and say a square is an *equilateral* rectangle. And so a physician is a scholar and something more; more, by that special body of knowledge which is required for his specific duties. To see how necessary this item is to the very existence of the professions, let us imagine all men to have the knowledge now required of the physician. Then, at a single stroke, the line between professional and non-professional would disappear. That is, the specific difference between genus and species would disappear; the species would be absorbed in the genus.

In the second place, the knowledge constituting this specific difference is obtainable with difficulty. In a certain sense the professions are monopolies—they have the exclusive possession of certain kinds of invaluable knowledge. Why do not men break down this monopoly by getting possession of this distinctive knowledge? Chiefly because it is a very difficult thing to gain it. Why do not men break down all class distinctions, and thus reduce society to a homogeneous condition? Evidently, because of the impossibility of gaining those things upon which class distinctions are founded. To be a physician,

a lawyer, or a minister, requires the mastery of knowledge so abstruse that men in general will not endure the toil and sacrifice necessary to obtain it.

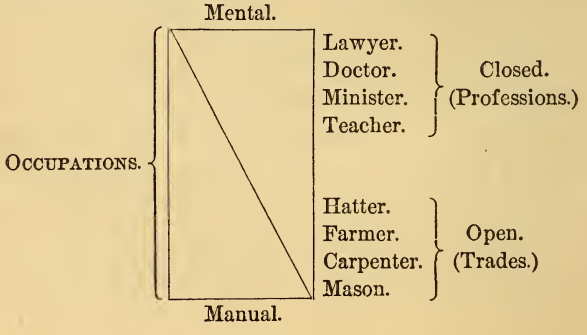
In the third place, professional knowledge is scientific in character. Here we are confronted with a distinction that deserves to be noted. The blacksmith must have special knowledge in order to fit him for his special duties, but this knowledge is restricted to mere processes, or ways of doing work. He must master the How of his art. But however expert he may be in his manipulations, he cannot explain the principles or laws on which they rest. In other words, while he is proficient in the How of his art, he is ignorant of the Why. The smith can perform a variety of processes, but can explain none of them; while the scholar can explain the several processes, but can perform none of them. In the main, manual dexterities are easy of attainment; they involve a low order of knowledge, and constitute an art. On the other hand, the principles that underlie processes and thus explain them are discovered with great difficulty; they involve a much higher order of knowledge, and constitute a science. Blacksmithing is a trade, and the smith an artisan. Chemistry is a science, and the chemist is a member of a profession. The knowledge required for the practice of an art is empirical knowledge; while the knowledge needed in a profession is rational or scientific knowledge, consisting of doctrines, principles, and laws. My definition of professional knowledge will now be clearer if I reverse the order of marks and say that this knowledge must, first of all, be scientific; that because it is scientific, it is attainable with difficulty; and that because of its difficulty, it is restricted to a select few; and, lastly, that because a profession is a select body, it is

also a privileged body, enjoying certain prerogatives that are attractive to men of ambition and talent.*

Let us now inquire on what grounds these privileged bodies are maintained. What good reasons are there why law or custom prescribes difficult terms on which admittance may be gained to the professions? Perhaps it might be better to make them higher and stronger. Let us see.

1. Suppose we ask why there is free admittance to the guild of blacksmiths, while admittance to the guild of physicians can be obtained only on hard conditions of a prescribed kind. We know that in most cases the law determines who may practice medicine, but neither law nor custom interferes with any man's wish to become a blacksmith. Evidently there must be some reason for this discrimination. We may say, in a word, that society guards the entrance to the medical profession as *a necessary measure of self-protection.* The knowledge and skill needed for the successful practice of the blacksmith's art are within the easy reach of all. In other words, it is reasonably certain that all who may choose

* The relation of the closed occupations (professions) to the open occupations (trades) may be illustrated as follows:



this vocation will become workmen who may be safely trusted. But suppose a man turns out to be an incompetent blacksmith. In the first place, the consequences of his incompetence are not likely to be serious, scarcely more, in most cases, than a slight money loss; and in the second place, the difference between good and bad work is so easily discovered that imposition is practically impossible. So society does not resort to any formal means of self-protection. But how different the case is in the practice of medicine! The knowledge and skill needed in this art are to be obtained only with great difficulty, and consequently, out of the multitude who might wish to turn physician only a very small number have the talent and industry that suffice for the purpose. Besides, men in general are not competent to decide between fitness and unfitness in this line of activity, and so this determination is left with specialists, with the faculties of medical colleges, and their decisions are regarded by the law as final; and in the third place, the consequences of malpractice are so fearful that society is justified in taking extreme precautions to exclude incompetence from the medical profession. Recalling the illustration I have already used, why is the professional camp thus strongly fortified? The proximate answer is, to shut out pretenders and the incompetent; and, if we demand the cause of this formal exclusion, we find it in the right of society to protect itself from grave peril. Should these safeguards be more or less rigorous than they now are? Does society need more or less protection against professional incompetence? With respect to medicine and law, I think but one answer can be returned. There is a most urgent need that society should be much better protected against quacks and shysters. The standard of

professional education should be much higher than it is. The quality should be raised, even at the expense of quantity. If necessary, let us have fewer doctors and lawyers, but let those we have be gentlemanly, scholarly, and skilful. I sympathize with a venerated and lamented colleague* who was accustomed to characterize the current practice of law as "the constitutional means of defeating the ends of justice." I am not competent to express an opinion on the great political issues of the day; but, in the matters I am now discussing, I feel sure that the great need of the country is protection rather than free-trade.

2. I have now shown that those corporations or guilds known as professions owe their existence, in the first place, to the need felt by society of protecting itself against dangerous incompetence. It is now to be noted that society needs to offer special inducements to men to fit themselves for lives of activity that require an unusual amount of time and labor in the way of preparation. Everywhere men are disposed to support life on the easiest terms, or to move in the line of least resistance. If a man has to spend five years instead of two in acquiring fitness for an occupation, it will be done only in the hope of some prospective reward. The case, when stated very plainly, is this: Will it pay me to spend several of the best years of my life, and a considerable amount of money to boot, in order to fit myself for the practice of a difficult art? Now, whether this sacrifice will finally pay or not depends on two things: on the rate of remuneration and on the social position that will be accorded by society. We will consider remuneration in money as the chief reward that society gives for the long toil and great ex-

* Dr. B. F. Cocker.

pense in making a preparation for the practice of a profession. By what process does it come to pass that the prospective physician or lawyer may confidently hope to receive, let us say, $10 a day for his professional services? Law and custom effect this result in a very simple and satisfactory manner by *protecting professional men from unjust competition.* The mode of doing this is equally simple. Through law and custom, society will admit no one to the privileges of the professions without exacting from him a certificate of competence. The incompetent shall not compete with the competent for employment; and the necessary consequence is that there is a rise in the rate of remuneration. This is the reward offered by society for the attainment of high excellence in a difficult art. It is curious to observe how society protects itself by lending its protection to the professions. To abolish this protection, by allowing all who will to practice medicine, would be to reduce the physician's fee to the stipend of a day laborer. This reduction in remuneration would abase the grade of competence, so that, in the end, quackery would become rampant, and society would become unprotected against gross incompetence. By ceasing to protect the professions, society would abandon the means of self-protection.

This practice of offering rewards for special efforts and special excellence is, in fact, very common. The great purpose of the agricultural society is to stimulate farmers to produce improved specimens of fruits, grains, vegetables, cattle, etc. What is the mode of stimulation? The offering of a premium in money, or a medal, or a diploma. It is the interest of society to stimulate men to make high achievements in difficult lines of activity; and the only efficient means yet found is to offer some

adequate reward. In some cases this reward is a sum of money in hand; in others it is the bestowal of special privileges and prerogatives; but in all cases the principle is the same and is equally justifiable.

This discussion of the general nature of the professions may possibly seem like a digression, but I have thought the digression necessary, as the means of determining whether teaching can be ranked as a profession, and whether young men and women who are being trained in normal schools may find in teaching a career, an opportunity to rise to distinction by the exercise of their best gifts of mind and heart. Shall teaching remain the sorry trade that it has been, or shall it be ennobled to the dignity of a profession? These are questions worthy of grave consideration, alike by teachers and by parents; for in this matter there is a perfect solidarity of interest. All the active years of my life thus far have been spent in the public-school service, and in this service I expect to remain till the period of my activity shall close. So far as I have known how, I have done my work in the professional spirit. I have chosen teaching as a vocation for life. I have tried to bring the scientific spirit to bear on all the details of my work; and this work, pursued in this spirit, has been a delight. I yield to no one in according honor to the ministry. But, for myself, I would rather be a teacher than a preacher, a former than a reformer; and my purpose in this chapter is to say something that may encourage young men and women to adopt the public-school service as a profession. I shall now adduce the several reasons that seem to me conclusive why teaching should enjoy the dignities, the rights, and the rewards of a profession.

1. Teaching is an intellectual art. It is addressed

to the spirit. It deals, primarily and principally, with mind. It has been well said, "On earth there is nothing great but man; in man there is nothing great but mind." What sublimer vocation, then, than to be the conscious and skilful minister to the mind's needs and aspirations? By its vastness and complexity, the earth is a sublime mystery, and it is easy to comprehend the enthusiasm of the scientist in his attempts to solve the problems of material and animal existence; but what is this earth when compared with the vastness, the complexity, and the mystery of spirit? Now, he who has to do with the laws of spirit is an artist, and he who has in charge the moulding of the plastic spirit may aspire to be the prince of artists. To be called to defend the body against disease, and to secure the citizen against any invasion of his rights to liberty and property, are high vocations, and those who charge themselves with such duties are properly invested with professional prerogatives; but higher than these functions is that of forming and informing the spirit, and society can scarcely offer a prospective reward too high for artistic excellence in this line of activity. Should not the men and the women who make themselves worthy of this high office be protected against unjust competition?

2. Moreover, society is as much in need of formal and valid protection against incompetence in teaching as against incompetence in legal and in medical practice. The reasons for the need of this formal protection on the part of society are the extreme difficulty of discriminating between competence and incompetence, and the grave peril involved in a mistake in making this discrimination. These reasons are in full force in the case under consideration. I believe there is no art practised

among men in which it is so difficult to distinguish between fitness and unfitness, between work of high quality and work of low quality. Let me illustrate and verify this statement. Let us take what seems to be a simple case, that of the inspection of a school. If this inspection is to serve any valuable purpose, it must be competent to do three things: (1) To determine whether the school is in a good or bad condition. (2) If it is in a bad condition, to locate the trouble, or to assign a cause for the failure. (3) To provide an adequate remedy. Out of ten inspectors of the average mould, not more than five are competent for the first duty; and of these five, not more than three can locate the difficulty; and of these three not more than one can prescribe a rational course of treatment. In this illustration I have in mind what Charles Francis Adams has called "scientific school supervision." * Any other I hold to be worthless. What proportion of mere scholars are able to determine, on any rational ground, the studies that should form the common-school curriculum? I hold that no one but a specialist can have this competence. Comparatively speaking, it is much more difficult to prescribe a course of study for a particular school than to write a prescription for a fever patient. In both cases charlatanry should be an indictable offence.

3. I have said that professional knowledge is scientific in character; it is a knowledge of doctrines, principles, and laws, as distinguished from a knowledge of mere processes, methods, or modes of procedure. If we wish to accord high praise to a physician, we speak of him as *a man of science*, meaning by that expression that he is able to trace the route over which cause must pass in

* See *Harper's Monthly Magazine*, Nov., 1880.

order to produce its effect. Such a man has a comprehensive knowledge of the human body as a complex, vitalized aggregate; he knows the relation of each part to every other part, and to the grand whole; to every disordered function he can assign some definite cause or antecedent, and so can employ a large intelligence in adapting means to ends.

In the teaching art is there a state of things comparable to this? Is there within the reach of the teacher a body of knowledge so definitely scientific in character as to make possible a good degree of prevision? This is to ask whether the evolution of mind is subject to law, or whether there is a science of mind. For the teacher's art, being addressed primarily to the mind, if there is a science of mind, there must also be, of necessity, an applied science of teaching. I know of no reputable thinker who denies that there is a science of mind. I suppose the simple fact to be that there are more well-established principles in mental science than in medical science. The astonishing fact is that, until within a recent period, there has been no systematic attempt to found a rational system of teaching on the known laws of mental science. There is no general truth of which I feel surer than of this—that the teacher of to-day, if he will, may adopt a course of practice that, in its main features, is strictly rational. Instead of blindly following tradition, precedent, and mere authority, the teacher, if he will, may employ his versatile powers with the same deliberate confidence in law that sustains the physician in dealing with the cases incident to his profession.

That this body of psychological knowledge is difficult of attainment no one who is at all versed in the science will deny. From this point of view, to be a teacher is no

mean task, for it implies not only a mind predisposed to reflection and gifted with some degree of philosophic insight, but a patient persistence in study of which only a comparatively few are capable. Students who are conscious of high gifts may find in the pursuit of educational science a field for the exercise of their best powers, and, in the practice of their art, the daily and hourly opportunity to test their scientific versatility.

As further illustrating the nature of that special body of knowledge that the teacher may rightly regard as professional, I will follow a little further the analogy between the practice of medicine and of teaching. In addition to his proficiency in physiological and anatomical knowledge, the physician must know the therapeutical value of each remedial agent, so that, in the treatment of disease, he can make a wise discrimination in the use of the resources at his command. This has its almost exact parallel in the teaching art, where each study has its peculiar nature, produces its own effect on the growing mind, and serves a purpose that no other study will serve. The education value of studies stands in the same relation to the teaching profession that materia medica does to the medical profession. Is this an abstruse branch of learning? For a reply, look at the names of the few who have attempted to fix these values.* Here is a field of study as attractive as any known to physical science. To formulate a comprehensive statement of education values I believe to be the most important task of the educational philosopher.

A third element of professional knowledge, of at least co-ordinate rank with the two just described, is still to be noted. The organon, or chief teaching instrument,

* See Chapter III.

is language, considered as the medium of communication between teacher and pupil. That accomplished scholars are sometimes conspicuous failures in the art of teaching has long been an observed fact. In many cases, no doubt, this failure can be traced to an inability to govern, but in quite as many cases the fault lies in an awkward use of the great teaching instrument, language. With a deft use of language, all the intellectual resources of the teacher can be brought to bear upon the task in hand; but, deprived of the ready use of this instrument, the wisest teacher is as powerless as an infant. What is the office of language in the communication of knowledge? Under what circumstances is this communication impossible? In what sense is it true that books embody knowledge, and so serve to transmit the net products of human thinking from generation to generation? These plain-looking questions are not easy to answer. The solution of these problems involves the very philosophy of language; and, to a mind predisposed to reflective thinking, here is a field of study of unsurpassed interest. What I wish particularly to say is that the professional teacher has need to become acquainted with this abstruse philosophy in order to become thoroughly furnished for the deft practice of his art.

By way of recapitulation, let me now state the grounds on which teaching should be included in the professions.

1. Teaching belongs to the higher category of intellectual employments, involving broad scholarship, the ability to make nice discriminations, and the use of the highest gifts of mind and heart.

2. The professional knowledge required is abstruse, difficult of attainment, demanding intellectual qualities of a high order.

3. Men in general are incompetent to distinguish between fitness and unfitness for the teaching office, and the consequences of malpractice are so serious that society needs to be formally protected against imposture.

4. To become fit for the practice of teaching, in the high sense here intended, is such an arduous undertaking that society should hold out some prospective reward to induce men and women of talent to adopt this vocation.

On these grounds alone I do not hesitate to say that teaching is as much entitled to professional sanctions as medicine and law.

At this point in our discussion it is pertinent to inquire whether teaching can become a profession in the exact sense in which medicine and law are professions. To this question candor compels me to give a negative reply; and the reasons why teaching cannot become a close corporation like the professions named are not difficult to state.

First of all, a teacher must be a scholar, and if he is to be a teacher of real power, he must be a man of wide and accurate scholarship; then, to his general scholarship, there must be added a knowledge of the best methods of doing school work; and, finally, the real teacher must be a man of science, he must know the *why* of his art. Now, as good scholarship is one element in fitness for teaching, it follows that all good scholars are qualified, in part, for teaching. On the side of scholarship, then, there is free admittance to the teaching vocation; so far, there is no professional line. And in respect of method, the case is not much better. A pupil cannot pass through a course of study without imbibing its methods; and when he turns teacher, he will teach as he was taught; so that we may say here, as we said before, that all good

scholars have partial qualifications for teaching — they know what to teach, and how subjects have been taught. So far there has been no appearance of a body of peculiar knowledge that differentiates the teacher from the scholar; but in the third conception we have noted we find this specific difference: that articulate psychological knowledge on which I have insisted, the knowledge of education values to which I have alluded, and the knowledge of the philosophy of language as the teaching instrument, are items that do not enter into general scholarship, but in their applied use are monopolized by the teaching vocation. To recapitulate what I have now attempted to say, teaching can never be a profession in the exclusive sense that medicine and law are professions, for the reason that all well-educated men and women have partial qualifications for the vocation. The professional mark, properly so-called, is *educational science;* this is the specific difference that distinguishes the species teacher from the genus scholar.

From this last statement some practical inferences of great importance can be drawn. Suppose it is thought desirable to intensify the professional aspect of teaching, or to sharpen the distinction between the teacher and the mere scholar. The one thing needful for this purpose is to make a knowledge of educational science an essential for obtaining a license to teach. If this test were to be applied, the vast army of teachers would be more than decimated. But it is to another inference that I wish to call attention in this connection. If any are ambitious to become professional teachers in the exact sense of the term, they will acquire that special body of knowledge to which I have called attention, and, by so doing, they will rise from the "sorry trade" of the mere schoolmas-

ter to "the noblest of all the professions," that of educator.

To shield my treatment of this theme from being too incomplete, I feel bound to answer another question that may reasonably be asked. Is it ever to be expected that all who teach will make of their employment a profession in the absolute sense that has been described? Will the time ever come when every teacher will know the *what*, the *how*, and the *why?* Probably not. For reasons that need not be stated, many will practise this art simply as an avocation, or temporary employment. Such teachers will have neither the professional spirit, nor the professional preparation. But, leaving these out of account, there will always be a large number of those who make this art a vocation that will know little or nothing of the science of teaching; but if such are well versed in rational methods, they may properly be included in the teaching profession. What we are entitled to expect, to pray for, and to work for, is that there shall be a growing number of cultured men and women who shall be versed in education both as an art and as a science. Of these alone it may be said that they *profess* their art. They are professional teachers in the exact sense of the term.

CHAPTER XIV.

THE TEACHER AS A PHILANTHROPIST.

It is related of Rousseau that, on the occasion of one of his foot-journeys through France and Italy, he sought refreshment and rest in the cabin of a peasant; and that the wretchedness and misery of human existence, as he there saw it, inspired him at the same time with a profound sorrow for humanity and with a profound hatred for the pride and the oppression of the powerful and the rich. From that moment an unquenchable fire burned in his veins, and it is doubtless to that shock to his oversensitive nature that we owe in great part the volume that has moved the human heart more profoundly than perhaps any other that has been produced by a merely human pen. Like too many others, no doubt, I have sometimes been offended at the overcharged sentiment and the paradox that abound in Rousseau's masterpiece; but my heart is touched and I am won back to admiration and gratitude when I read a sentence like this: "O men, be humane! it is your highest duty; be humane to all conditions of men, to every age, to everything not alien to mankind. What higher wisdom is there for you than humanity? Love childhood; encourage its sports, its pleasures, its lovable instincts. Who among us has not at times looked back with regret to the age when a smile was continually on our lips, when the soul was always at peace? Why should we rob these little innocent creatures of the enjoyment of a time so brief,

so transient, of a boon so precious, which they cannot misuse?" *

It is Rousseau's ardent humanity that gives a degree of unity, consistency, and even of beauty, to a life otherwise disordered and full of wretched inconsistencies. He looked upon the European society of his day as a whited sepulchre. Outwardly there were the pomp of power, the glitter of wealth, and the pageants of religion; but within and below there were ignorance, degradation, and squalor. Princes despised people, and, in their turn, the people hated princes. Between the rulers and the ruled, between the rich and the poor, between the learned and the ignorant, there had come to be a social divorce; between the few and the many there was a great gulf fixed, and this gulf the few did not wish to pass, and the many had despaired of passing. Rousseau was himself a man of the people, and in him there seems to have been concentrated the conscious suffering of his class; but while the peasantry were dumb, benumbed, perhaps, by their secular oppression and sufferings, Rousseau had a voice full of pathos and persuasive eloquence. It spoke through the "Émile" and awoke the people to self-consciousness. Authority, ecclesiastical and civil, was aroused and alarmed, and, as is usual in such cases, it took refuge in persecution; but this Genevan watchmaker's son, this inspired tramp, this sentimental philosopher, had fired a train, and there followed the awful explosion of the French Revolution. The social divorce was not healed, but what was lowest was lifted upward, and what was highest was abased. However, the growing divergence ceased, and the new movement was towards unity, fraternity, and equality. The train that was lighted in Eu-

* "Émile," Miss Worthington's translation (Boston, 1885), p. 43.

rope had its first effect in the new world. The American Revolution was but the prelude to the French Revolution. Both events were triumphs of humanity over oppression; and in the earlier as in the later, no account of causes can fail to mention the pen of Rousseau. The man whose ruling passion was *love for the people*, was, in the hands of Providence, an unconscious agent in moulding the institutions of a new world.

Going back a century from Rousseau's time, we find another man whose greatness was due to his ardent and exalted humanity. This was Comenius, the Moravian pastor, whose fame reached even these shores, for he was invited to become the president of Harvard College in 1654. Comenius had more balance than Rousseau. In him sentiment was tempered, governed, and directed by reason and religion. He not only felt, but he saw. He was not a guide-post, but a guide. He was not only a great educator, as Rousseau was, but he was what Rousseau was not and could not be, a great teacher. By first intent he was a preacher, but he loved the people so well that he became a teacher. Learning, which in his time was the privilege of the few, was to be made, through his proposed organization of schools, the common heritage of the many. His scheme of popular enlightenment was so comprehensive and so far-reaching, that every home was to become a school. He did not write an educational romance, like the "Émile," which was to intoxicate through sentiment; but composed a school manual, the "Orbis Pictus," which was translated into various languages, and for two centuries was the universal textbook for popular instruction, and is the parent of the modern illustrated child's book. The greatness of Comenius was due to the fact that he was above all else a

philanthropist. He knew the people, saw their wretchedness, and became a martyr to their cause. He believed that the people were perishing for lack of knowledge, and so he organized instruction as the means of their salvation.

Coming back now to a period a little nearer our own time, we find another Swiss youth whose soul was wrought into almost preternatural activity by his love for the poor, oppressed, degraded people. His first impulse was to be a preacher, but his diffidence betrayed him in his first sermon—he could not repeat the Lord's Prayer. Then he thought of law, but some unpleasant experiences cooled his political ardor. Next he turned agriculturist, because he saw a chance for the regeneration of the people through the organization of profitable industries. But his madder-farming failed, he was reduced to poverty, and as a last resort he set up a school for the outcast children of his neighborhood. This was the great Pestalozzi, the story of whose life and labors and sufferings is among the most pathetic ever written. From his twentieth to his eightieth year he had but a single purpose, to relieve the wretchedness of his poor countrymen. He had discovered that political reforms and industrial improvements could not reach the seat of the social disease; and so, laying the axe to the very root of the tree, he gathered up vagrant children, became their housekeeper, nurse, servant, and teacher, and gave them lessons in cleanliness, good manners, morals, and in the elements of an education. Here is a picture of Pestalozzi's school, drawn by one of his biographers:* "There, in the midst of his children, he forgot that there was any world besides his asylum. And as their circle was an

* Biber, *op. cit.*, p. 34.

universe to him, so was he to them all in all. From morning to night he was the centre of their existence. To him they owed every comfort and every enjoyment; and whatever hardships they had to endure, he was their fellow-sufferer. He partook of their meals and slept among them. In the evening he prayed with them before they went to bed; and from his conversation they dropped into the arms of slumber. At the first dawn of light it was his voice that called them to the rising sun, and to the praise of their heavenly Father. All day he stood among them, teaching the ignorant, and assisting the helpless; encouraging the weak, and admonishing the transgressor. His hand was daily with them, joined in theirs; his eye, beaming with intelligence, rested on theirs. He wept when they wept, and rejoiced when they rejoiced. He was to them a father, and they were to him as children."

At first thought this will doubtless appear to be an extraordinary method of conducting a school; but I have little doubt that reflection will show that there is in it an element of perennial value. What this element is I can best illustrate by relating the following occurrence: A young man was employed by wealthy parents to take in charge the education of an imbecile son. This boy was so low in the scale of mentality as to be unable to stand, or even to sit, as rational beings do, but his usual posture was lying at full length on the floor. After considerable reflection the tutor decided to put himself on a plane with his poor pupil, and so he took his place beside him on the floor. Then presently he raised himself on one arm, and finally his pupil, through imitation, raised himself to this extent. After many lessons of this sort the tutor took the sitting posture; and perseverance, encour-

agement, and trial soon brought the pupil to the same posture. In the end, it is said that this imbecile boy became a man to the extent that he could both stand and walk.

In both these cases the element of power is *nearness through sympathy*, and the impulse to growth comes through the effort of imitation. But what was the power which brought the teacher down to a level with his pupils? It was the feeling of benevolence, of humanity, of philanthropy. Pestalozzi was, above all else, a philanthropist.

But what could one such school do for the regeneration of Switzerland? It was but a drop on a parched desert. Pestalozzi saw the hopelessness of realizing his great purpose through any direct personal effort of his own, and so he conceived a plan worthy of a statesman. This was nothing less than to make of every mother a teacher, and thus to convert every home into a school. For this purpose he wrote a popular romance—"Leonard and Gertrude"—designed at once to inspire mothers with a philanthropic passion, and to present, under the attractive guise of fiction, an example for imitation.* This work had an extraordinary popularity. It was universally read, but, alas! it was not understood. It pleased, but it did not inspire. Its real spirit and purpose were wholly missed. It was with no little chagrin that the good Pestalozzi saw the failure of his plan; but, such was the

* In the edition of 1800 he writes, "I desired nothing then, and I desire nothing else now, as the object of my life, but the welfare of the people, whom I love, and whom I feel to be miserable as few feel them to be miserable, because I have with them borne their sufferings as few have borne them." See Quick, "Essays on Educational Reformers," pp. 167, 168.

buoyancy, such the hopefulness, of his nature, that he wrote a second book, to explain the meaning and the purpose of the first. This was his "Christopher and Eliza." This was doubtless more successful than the first, but its immediate effect was disappointing.

I narrate these facts because they are typical of Pestalozzi's career to the very day of his death. From the organization of his madder-farm, in 1769, to his last school at Yverdun, in 1824, there was not an instance in which he took a resolution from selfish motives. He literally sacrificed himself for the good of the poor, the wretched, and the ignorant. He says of himself, "A thousand times have I left my poor children seated about a table at their meals while I devoured a crust by the highway."

Tried by modern standards, Pestalozzi's schools were failures. The disorder was pitiable, and the positive instruction was slight. All his days he was groping his uncertain way after a "method." He felt intensely, but he saw obscurely. His benevolence, generosity, and goodness were boundless, and so was his credulity. He was as simple, unaffected, and trustful as a child, and so was the easy dupe of the jealous and the ambitious. What, then, was the secret of Pestalozzi's power? How has it happened that this Swiss peasant, this ignorant and uncouth man, this itinerant teacher, has made a name and secured an influence in the world which have insured his immortality? It was his absolute devotion to the good of his kind. It was his quenchless love for the poor people. Without denying Pestalozzi the merit of having made some contributions to method, it is perfectly hopeless to account for his greatness on this score. It is the spirit of the man, and not his method, which enti-

tles him to a pre-eminent place among the great names in the history of education.

What I have said of Pestalozzi is true, though, perhaps in a less degree, of Froebel. His inspiration was his love for childhood. Children, in his conception, were as tender plants, to be carefully and lovingly trained, and the teacher was a workman in this human garden. The school was, therefore, a *kindergarten.* The only part of the teaching service in this country that is dominated distinctively by the philanthropic spirit is the kindergarten service. What I mean is, that this is the only part of the service to which women and men devote themselves from purely humanitarian motives. The spirit that animates and actuates the kindergartener is the very spirit that calls the missionary across the sea to the dark continent. This is the spirit of Miss Peabody and of Mrs. Mann, and of the whole army of women who are now organizing the kindergarten in the great cities of the country. Froebel's real "gift," infinitely more valuable than the cylinder, the sphere, and the cube, is the love for childhood that his ardent zeal has inspired in the hearts of his disciples. The power of the kindergarten, as it seems to me, lies in the fact that the teacher, so to speak, now listens to the heart-beats of the little child.

Surely, in further illustration of the fact that the world's greatest teachers have been inspired by a love for ignorant and suffering humanity, I need not dwell at length on the story of the Nazarene peasant, the carpenter's son, who, by his sufferings and services, has become exalted over every other name in the annals of time. But have we sufficiently reflected on the fact that Jesus owes his awful pre-eminence among reformers to his perfect condescension to men of low estate, to his frank

companionship with publicans and sinners, to his holy ministrations to the disinherited of this world? In all that marvellous life there is nothing more significant or more touching than the fact that ignorance, weakness, and sin, instead of repelling Jesus from men, drew him into closer sympathy with them. We may almost say that he loved men because they were sinful and vile. The first quality in this ministration was an infinite pity for the lowly sufferers of this world; and its purpose was to plant in each human soul an inspiring and protecting hope for a better and a happier hereafter.

All the great reforms in politics, in religion, and in education have consisted, essentially, in securing to the people some right of which they had been deprived. Reform thus implies the monopoly of certain things by those who chance to be invested with authority and power; and it also implies that suffering is caused by the withholding of these things from those who are entitled to them. Thus, in France, prior to the revolution, there was royalty, haughty and defiant, on the one hand, and on the other the poor people, weary and heavy laden. Could power always be arrogant and unpitying? Would the people always suffer in silence under their secular burdens? Had Louis XVI. put his ear to the ground he might have heard the rumbling that foretells the earthquake. But he did not, and so the shock came, his throne was overturned, and he perished in that awful night of pitiless storm. George III. heard the sounds of discontent from his American colonies, but he did not interpret them aright, or, at least, he did not heed them, and so our revolution came, and the people gained by force what should have been given them as a

right. For weary years England has turned a deaf ear to the pathetic story of Ireland's wrongs, and the premonitory shocks of revolution have been felt in the Parliament House. But there is one man who hears and heeds the groans of this brave and oppressed people; and this humane commoner, through the very power of his humanity, is at this hour the great statesman of Europe. As we think of the renewed ascendency of Gladstone in British politics, we can but repeat Rousseau's eloquent period: "O men, be humane! it is your highest duty; be humane to all conditions of men, to every age, to everything not alien to mankind. What higher wisdom is there for you than humanity?"

I need not attempt to show how revolutions and reformations are made necessary by power that has grown haughty, cruel, and relentless, or by wealth that has become selfish, proud, and heartless, or by religion that has degenerated into a soulless formalism or an official ceremonial; but I will dwell for a moment on an analogous fact which is not so obvious, and which will bring me nearer my present purpose.

Even learning is disposed to become aristocratic, and to intrench itself behind its prerogatives. In all ages of the world men have made a monopoly of wisdom. Anciently the priestly class was powerful, because it was the only instructed class, and it perpetuated its authority by maintaining a strict monopoly of its inherited wisdom. Popular ignorance was the condition of priestly supremacy. At this very moment the doctrine is held in more than one quarter that knowledge predisposes men to be dissatisfied with their ancestral condition, and that the only way to keep men in a contented, docile, and manageable condition is to keep them comparatively

ignorant. The educational problem in England is, at this moment, complicated by a fear of what might happen if the lower classes were to be too highly instructed.

In some quarters there is a disposition, both in practice and in theory, to administer education on a principle which is a virtual recognition of caste distinctions. In practice, this disposition is seen in attempts to convert school instruction into an apprenticeship to a trade, as though the prime purpose of education were to fit pupils, some for carpentry, some for shoemaking, others for farming, etc. I interpret the present agitation in favor of industrial education partly in this sense. In theory, this disposition is seen particularly in the first chapter of Mr. Spencer's "Education," where the worth of knowledge is tested solely by the practical use that can be made of it; a child must be taught that which will soonest and most effectually convert him into an instrument. In no part of this famous chapter do I discover a sentence that can be interpreted in favor of a liberal education; that is, of an education that is catholic and humane, or that is to be administered on the hypothesis that the child's humanity takes precedence of his functions as an instrument. On this subject Renan speaks as follows: "The reasoning that I oppose starts from the low and false doctrine that instruction serves only for the practical use that is made of it. . . . The poor man should be ignorant, for education and knowledge are useless to him. Blasphemy, gentlemen! The culture of the mind and the soul are duties for every man. They are not simply ornaments. They are things as sacred as religion."*

* "La Famille et l'État," p. 3. See, also, p. 48 of this volume.

I think there is some ground for fearing that the schools may be drawn into false tendencies through the administration of education by the literary or scholarly class. Is it not at least possible that professional teachers, who are, or should be, men and women of scholarly tastes and habits, may administer education on the hypothesis that their pupils are destined for the scholarly vocation? Is it not possible, in other words, that a teacher, in drawing up a course of study, may unconsciously obey his own instincts and tastes, instead of putting himself in the place of the boys and girls who are to be farmers, artisans, tradesmen, housewives, etc.? It must be held, I think, that the major effort of the school should be directed to the training of men and women, and not of laborers, artisans, etc.; but, at the same time, the fact that these men and women must become bread-winners should not be lost sight of. The school must not be conducted on the hypothesis that its pupils are to be professional scholars. I believe it to be a fact that, to some degree—slight, perhaps—the schools have been allowed to drift away from the people, to ignore their wishes and wants, and so to encourage the formation of an intellectual aristocracy. The higher we go in the scholastic organization, the greater this danger, and the more pronounced this tendency. I think there must be some truth in the widespread feeling that the high school does not sufficiently respond to popular needs. I decline to be quoted as sympathizing with the periodical attacks made by demagogues on the high school. My only purpose is to call attention to a source of danger in high-school administration.

Might not our highest institutions of learning be brought into closer sympathy and relations with the peo-

ple? I wish that every boy who follows the plough with a book in his pocket, and feels an hourly thirst for intellectual improvement, might not be overawed by the apprehension of a formidable entrance examination. I wish that all such might feel that the college or the university will gladly lend to them a sympathetic and a helping hand; will, at least, grant them an opportunity to succeed. I am growing more and more convinced that an earnest purpose is often more than an equivalent for technical scholarship. But how many examiners take note of these moral qualities? They have been trained to discern a misplaced accent or a false quantity or an incorrect date. There is no doubt that many a talented boy has lost the opportunity for the higher intellectual culture through the force of such technicalities. If, at the first, such a boy can put only one foot on the college campus, let him do it.

There are many gains, but there is also some loss, in making an art like teaching a vocation or profession. The loss consists in making the teacher's duties more or less formal, divested of the halo of sympathy and emotion. Who has not listened to church services that were purely formal, hollow, and heartless? The sermon was not addressed to dying men, who had immortal souls to save. The minister was paid for preaching an hour, and he preached an hour. The prayer was a necessary accessory, and so it was uttered; but it echoed the aspiration of no penitent soul. There is much teaching, as there is some preaching and praying and singing, that is purely perfunctory; it has no quickening or vitalizing power, because it is not inspired by sympathy and emotion. In such teaching there is no sense of nearness to the pupil. The philanthropic instinct is wanting. It is as though

the instruction were addressed to matter and not to heart and spirit and life.

In what has preceded I have tried to show that to be a teacher in deed and in truth is, first of all, to be possessed by the philanthropic spirit; that the world's great teachers have been inspired by philanthropic motives; and that the secret of individual power in teaching is a profound sympathy for human weakness, ignorance, and suffering. I have, also, stated some reasons for thinking that modern tendencies are somewhat away from this humanitarian ideal. In what follows, my purpose is to suggest some correctives of these tendencies.

1. Some years ago a certain state agricultural college was in great disfavor with the farmers in whose interest it had been established. These sons of toil looked with contempt upon "book farming," and spoke derisively of kid-gloved college professors who raised hogs and turnips by rule. But a happy inspiration came to this college faculty. For a few weeks in each year this agricultural school was put on wheels, so to speak, and taken to the very doors of farmers and dairymen. In other terms, "farmers' institutes" were held in various sections of the state, for the discussion of agricultural questions of current interest. The theoretical farmer was thus brought face to face with the practical farmer. The gain was mutual. The farmer became interested in looking at questions from their theoretical side, and learned to respect men who were devoting earnest lives to the scientific study of agricultural questions. On the other hand, the college professor learned the practical limitations to his theories; was brought into hearty sympathy with the earnest men who form the very basis of the nation's prosperity, and learned to respect the practical wisdom of men

who had been taught in the school of experience. In a word, misconception and prejudice disappeared, the gulf between college and people was filled, and there came the era of mutual confidence and respect.

2. In another case, a state university was languishing from a lack of popular appreciation. The institution was regarded as a literary aristocracy, proud in its prerogatives, and regardless of popular wants and wishes. By concerted action, during the long vacation, the faculty was distributed over the state, and, by popular addresses and personal intercourse, came as near as possible to the homes of the people. Again, there was a disappearance of mutual misconception and prejudice; young men and women of scholarly aspirations found sympathizing and helpful friends, and, with the opening of the new college year, their names were added to the students' roll. "Science never ascends," it has been well said; and it cannot be too often repeated that, between the people and the institutions of the country, there must be open communication, and that the more highly privileged must come down to the people as the condition of drawing men to them.

3. Some years ago I knew a village which was a by-word and an offence by reason of its unsavory reputation on the score of morals. In the language of the country around about, the name of this village was a paraphrase for Sheol. The school partook of the common desolation. Men who had a name to make or a name to keep passed by on the other side. But, finally, a man who had been graduated from a normal school, and was full of energy, benevolence, and good sense, assumed the principalship of this school, and, in an unpretending way, began the process of regeneration within. He drew his

pupils to him by his sympathy and sheer good-heartedness. Teacher and pupil moved on a common plane of civility, respect, and helpfulness. The new spirit soon extended to the home-circle, and teacher and parents were brought into mutual sympathy and accord. Then the pacific contagion spread over the whole town, and even invaded the country. The teacher became a citizen. He was not a stranger and an alien. He never forced himself upon public attention or into a public place; but in whatever affected the public good he bore a personal part. Were there sickness, suffering, and destitution in a family represented in his school? A mute messenger was sent on errands of mercy. Scarcely a Christmas day passed in which some destitute family did not enjoy an unexpected feast. Years have passed, approaching a score, I think, since that humane movement began, but school and village and teacher have all prospered, and all are still engaged in these mutual benefactions. The name of this village has lost its sinister connotation, and citizen and neighbor alike speak of it with respect. The name of this man might have been Glülphi, and the school had more than one Gertrude. The village is, certainly, another Bonnal.

4. Still further back than the experiences just related is the vivid recollection of a country school in its winter session, taught by a young man of Quaker parentage, who had received an academic education. The large school and almost numberless classes left this teacher but little opportunity, during school hours, for leaving a personal impress on his pupils; but the long winter evenings, spent in various conversation with the families of the district, by their own firesides, left a profound and wholesome effect upon the impressible minds of the

children. It was, at least, the beginning of a liberal education to listen to intelligent and thoughtful conversation on men and books and the current topics of the day. The genial, hearty manner of the teacher had an insinuating power quite difficult to describe. The general impression on the younger minds was a somewhat vague, though delicious, aspiration for better things. To some there was revealed, in the dim distance, the apparition of the academy, and, still beyond, that of the college, and, beyond all, the vision of a literary life, blessed with the companionship of books and cultured friends. One evening, as this teacher was accompanying a lad belonging to this school to his home, he said to his pupil, "Would you not like to go to the academy next fall?" The boy's dearest secret, confessed to no one on earth save to his mother, had now to be revealed. Such an anticipation was almost too sacred to be talked about. Was not such a thing too good to be possible? And, then, would a boy with so little knowledge be received? The teacher suggested algebra and geometry as studies for the present winter, and pointed out the general requirements that would be expected. In a word, the boy's destiny was virtually settled during that winter evening's walk. A human soul had found its interpreter and guide. A beginning was made in the new life, and, one after another, the boy's visions became realities.

5. In the course of my professional life I have seen young people begin the work of teaching under almost all circumstances, but one incident in this line has left a peculiar impression on my mind. A young man who had carried his preparation but a little way beyond the common school felt an almost irresistible impulse to teach. But could he obtain a license? Ay, that was

the rub! The consciousness of his deficiencies made him almost shudder at the thought of an examination. Still, he resolved to make the trial. For prudential reasons, he concealed his purpose from his family, and on a Saturday made his way across the fields to the house of the township examiner. The good man was found in a field by the roadside. The trembling wretch made known his errand, and, with a cheerful consent, the examiner left his plough, and led the way to the plain and rather sombre sitting-room where the inquest was to be held. The trial bore rather lightly on reading, spelling, arithmetic, and geography; and, though the procedure of the inspector was kind and courteous, the candidate was overwhelmed by the revelations of his ignorance. Out of a full heart he would have pronounced himself unfit to receive a single line of approval. But the examiner was less censorious than the candidate. He placed before the sufferer a book of blank forms, and instructed him to draw a copy of a license to teach. Hope then revived a little, and the *labor* of writing began. The hand, cramped and awkward at best, was now, through the fever of nervous excitement, preternaturally bad. But, as all things finally come to an end, this feat of penmanship at last ended, and, when the examiner had scanned it, with the pretence of having read it, he affixed his signature, and from that moment there was another teacher in the world. On his homeward road, that boy walked as though on air. His predominant feeling was that of gratitude. He was keenly conscious that he had been licensed in spite of his deficiencies in scholarship, and that he had been credited with ability *in posse*, perhaps with good intent and steadfast purpose. However, he formed a sacred resolution to justify the confidence of

his good friend, and to deserve by his work what he would not claim on the ground of present attainment. The lesson I am taught by this incident is this—benevolent insight is often wiser than official wisdom.

An illustration of the same sort is found in the life of Krüsi, one of Pestalozzi's most famous assistants. "He was eighteen, and till then his only employment had been that of a pedler for his father. One day, as he was going about his business with a heavy load of merchandise on his shoulders, he met on the road a revenue officer of the state, and they entered into conversation. 'Do you know,' said the officer, 'that the teacher of Gais is about to leave his school? Would you not like to succeed him?' 'It is not a question of what I would like; a schoolmaster should have knowledge, in which I am absolutely lacking.' 'What a schoolmaster can and should know, with us, you might easily learn at your age.' "Krüsi reflected, went to work, and copied more than a hundred times a specimen of writing which he had procured; and he declares that this was his only preparation. He registered for examination. The day for the trial arrived.

"'There were but two competitors of us,' he says. 'The principal test consisted in writing the Lord's Prayer, and to this I gave my closest attention. I had observed that, in German, use was made of capital letters, but I did not know the rule for their use, and took them for ornaments. So I distributed mine in a symmetrical manner, so that some were found even in the middle of words. In fact, neither of us knew anything.

"'When the examination had been estimated, I was summoned, and Captain Schœpfer informed me that the examiners had found us both deficient; that my compet-

itor read the better, but that I excelled him in writing; . . . that, besides, my apartment, being larger than that of the other candidate, was better fitted for holding a school, and, finally, that I was elected to the vacant place.'"

And then the historian adds, "Is it not well to be indulgent to teachers whom we meet on the highway, who scarcely know how to write, and whom a captain commissions?" *

I do not wish these illustrations to be interpreted in such a way as to sanction a superficial examination of candidates for the teaching office. What I have particularly in mind is the need of making keener discriminations in forming an estimate of the elements of a teacher's qualifications. Almost any bungler can determine whether the answers to examination questions are formally right or wrong, and can sum up the marks and find the general average; but it requires exceptional talent to gauge the manliness, the reserve power, and the scholarly instincts which, after all, constitute the elements of fitness for teaching. I would like to whisper in the examiner's ear the need of searching for these high moral qualities. When they are found, they should be credited far above mere technical scholarship, and, where they are wanting, excellence in such scholarship should not entitle the candidate to a license. Of late, examinations have been the subject of much indiscriminating and unjust criticism. I think the chief fault in them lies in the direction I have indicated. The principle involved in these illustrations is just as applicable to the examination of pupils as of teachers.

6. In the treatment of subordinate teachers by super-

* Compayré, *op. cit.*, pp. 432, 433.

intendents and principals there is frequent occasion to employ the suggestions of the philanthropic spirit. The following case is typical of many that might be mentioned. A young woman of good intellectual attainments and sterling moral qualities was put in charge of a somewhat difficult ward school. Her power of discipline proved to be weak, and at the end of the first term it seemed almost perfectly plain, so far as surface instruction went, that she should not be re-employed. But the thought occurred, would it not be almost a crime to execute summary judgment on so good a woman, who was possessed of such an heroic determination to succeed? This humane suggestion was followed, some simple rules for governing were proposed, and another chance was given. The second term showed a slight improvement, but the old question came up for debate, and it was again decided in the teacher's favor. For the third term there was more help from the superior, and a more determined effort by the subordinate; and so these trials were renewed for the space of two years. Success finally came, and in large measure; and that superintendent sometimes almost trembles at the thought of an injustice that hasty conclusions might have done a noble woman.

7. It might sound harsh to inquire if some boards of education are not inhuman in their treatment of teachers, so let the inquiry be softened, and let us ask if teachers are at all times treated as humanely as the Golden Rule requires. One or two statements of fact will illustrate my meaning.

At the close of the year the preceptress of a certain high-school was not formally re-engaged, but was given to understand that she was expected to return. She went to her home in the East to spend her vacation, leav-

ing behind her the greater part of her wardrobe, her books, etc. Within a few days an official note reached her, stating that her services in the school were no longer required!

In another city, as sometimes happens by a sudden turn in the political tide, the school board was invaded by demagogues. Contrary to a custom of long standing, through some flimsy pretext the teachers were not re-employed in June, but, as in the last case, all were given to understand that they would be reappointed. Several repaired to a distant and inaccessible summer resort to spend their vacation, and had no sooner become settled in their rustic home than the news came that their successors had been appointed!

In both these cases the moral cowardice is too evident to need special notice; but the criminal injustice done these teachers becomes more apparent when we consider the fact that they were virtually debarred the opportunity to find other situations.

Many more such illustrations might be given, but I trust these will suffice to enforce the thought I have tried to express—that, in all departments of educational work, there is a decided tendency towards formalism, and that there should be a return towards an ardent philanthropy.

"O men, be humane! it is your highest duty; be humane to all conditions of men, to every age, to everything not alien to mankind."

CHAPTER XV.

EDUCATION AS A UNIVERSITY STUDY.

What has been said of constitutions may as truly be said of universities, that they are not *made*, but *grow*.

The modern university is the lineal descendant of the first solitary thinker who, inspired by a great thought of his own moulding, provoked in another mind a love for thinking. In process of time these solitary thinkers drew around them little bands of affectionate disciples, and so the circle of light became larger. Then, when scholars had a past behind them, when there had come to be accumulations of knowledge, there arose the impulse of diffusion, and so instruction was organized, and the inherited wisdom was communicated to those who had just espoused the scholarly vocation.

This organized effort to distribute accumulated knowledge was the beginning of that corporation now known as the university. This institution, therefore, has come to us, in the fulness of time, as an evolution or a growth. Universities are like constitutions in another respect—they not only *grow*, but they grow *slowly*. Systems of education are the products of the times; they follow in the wake of political and social changes, and, as civilization itself is a thing of slow growth, universities ever have been, and must continue to be, conservative.

But, nevertheless, university progress is a constant phenomenon, and we may be sure that, when an innovation has been made, it has a justification somewhere

in the nature of things; it is either the development of some historic factor that had fallen out of sight, or it responds to some new need. In whatever case, the new idea has a right to our respect, and the right of explaining the cause and the purpose of its appearance. The greater part of the world's progress is instinctive. The forward step is made by an unconscious effort, but we at once pause in a reflective mood, adjust ourselves to the new state of things, and thus involuntarily prepare for another forward step.

I do not appear as an apologist for the university study of education. I regard the new movement as an involuntary product of the times; as something without which a rational progress in education cannot profitably be made, and also as a fulfilment of a primitive purpose of university organization. There is no teacher in the land who has not a personal interest in the educational movement that I purpose to discuss. Nay, if it affects one class of teachers more sensibly than another, it appears to me to be the class doing the heroic, and often unrequited, work of the primary school. For university recognition of a teaching profession is a certificate of character from the highest academic authority, and this honorable recognition is the greatest boon to those who need it most.

When, in 1876, a chair of education was established in the University of Edinburgh, there was not a teacher in the United Kingdom who might not have felt a new pride in his calling; and I know that more than one teacher, even on this side the Atlantic, worked under a new inspiration from that day forward. By the simple fact of such recognition the entire teaching profession has been ennobled; and, now that there is a tendency in

the universities of this country to follow a precedent of long standing in Germany, and of more recent date in Scotland, it is surely worth our while to reflect on a topic of common interest.

More than one college graduate has been puzzled to understand why the day that crowns his four years' toil is called commencement day. To him it seems more like an ending than a beginning, and, in our present mode of academic life, so it is. But it was not always so. Commencement day is simply the survival of a feature of ancient university life that has been in disuse for centuries. Anciently the terms "master," "doctor," and "professor" had the same significance. A complete graduate was a master of arts, because he had completely compassed the circle of knowledge offered for his study; he was a doctor, because his master's degree was his license to teach; and he was a professor because, in his teaching, he professed a given subject; that is, devoted himself to the teaching of a special topic, as philosophy or logic. When, therefore, a student received his master's or his doctor's degree, he was said to begin, *incipere;* that is, to commence in earnest his vocation or calling—that of teaching.

The bachelor, or imperfect graduate, could also use his degree as a license to teach, but only on probation.

"In the original constitution of Oxford," says Sir William Hamilton, "as in that of all the older universities of the Parisian model, the business of instruction was not confined to a special body of privileged professors. The university was governed, the university was taught, by the graduates at large. Professor, master, and doctor were originally synonymous. Every graduate had an equal right of teaching publicly the subjects competent

to his faculty; nay, every graduate incurred the obligation of teaching publicly, for a certain period, the subjects of his faculty, for such was the condition involved in the grant of the degree itself. The bachelor, or imperfect graduate—partly as an exercise towards the higher honor, and useful to himself; partly as a performance due for the degree obtained, and of advantage to others —was bound to read, under a master or doctor in his faculty, a course of lectures; and the master, doctor, or perfect graduate was, in like manner, after his promotion, obliged immediately to commence (*incipere*), and to continue for a certain period publicly to teach (*legere*) some, at least, of the subjects appertaining to his faculty."*

I call attention to this historical fact to show that the ancient universities were, by their very intent and constitution, teachers' seminaries.

The thousands of pupils who flocked to Oxford and Paris there received the highest literary culture that the age afforded; and, on the completion of their studies, they were returned to the world as its accredited teachers. When, therefore, it is proposed to shelter the profession of teaching under university walls, it is, in fact, but restoring to universities their ancient privilege, and, at the same time, requiring of them the highest duty they owe to the world, that of the diffusion of the best results of human thinking. The universities have long since ceased to impose on their graduates the obligation to teach. It must have happened from an early date that all the doctors or licensed teachers could not be employed in scholastic work; so that, in process of time, the obligation ceased, and the graduate was at liberty to adopt whatever vocation he might prefer. But, while

* "Discussions," pp. 387, 388.

all who were graduated did not teach, all who taught were graduates. This was literally true during the earlier part of university history, and has remained substantially true down to the present day. For, as Mr. Fitch says, "The great function of a university is to teach, and to supply the world with its teachers."* The universities of this country are illustrations of this statement. The men who are really moulding the education of the time through the secondary schools are, doubtless, as a rule, the bachelors, masters, and doctors who have been graduated from these institutions.

The relation of a state university to the general educational system of the state has never been more accurately defined than by Chancellor Tappan,† and I cannot forbear to quote from one of his annual reports: "The highest institutions are necessary to supply the proper standard of education, to raise up instructors of the proper qualifications, to define the principles and methods of education, to furnish cultivated men to the professions, to civil life, and to the private walks of society, and to diffuse everywhere the educational spirit. The common school can be perfected only through competent teachers. These can be provided only by institutions like the normal school, which belongs to the intermediate grade of education. But the teachers of the normal schools, again, require other and higher institutions to prepare them; such, at least, as the academy, gymnasium, or college; and these, the highest forms of the intermediate grade, commonly look to the university for a supply of instructors.

"He who has passed through the common school is

* "Lectures," p. 4.

† President of the University of Michigan from 1852 to 1862.

not fitted to teach a common school. He who has passed through a normal school is not prepared to teach a normal school. He who has passed through a union school or an academy is not prepared to teach it. The graduate of a college is not prepared to become a college professor.

"But the direct object of a university is to prepare men to teach in the university itself, or in any other institution. Hence, those who, in the universities, become doctors, which simply means teachers, are, by that very degree, admitted to the vocation of a university instructor."*

If we were to make a summary and concrete statement of Dr. Tappan's thought, it would be as follows: *The great function of the universities of the United States is, directly and indirectly, to supply the country with its teachers.* Let it be noted that this is both the historic function of the university and the function required of it by the conditions of our present civilization.

It may now be asked whether our universities are not fulfilling this duty, even without making a formal study of education.

Was not the University of Edinburgh, for example, in the full performance of its duty prior to the establishment of the chair of education, in 1876? This is a pertinent question, and admits of a satisfactory answer. *Tempora mutantur, et nos cum illis mutamur.* Changed times require a change in institutions. The ancient university represented the primitive phase of opinion, that teaching ability was identical with scholarship; and so its masters and doctors were licensed teachers. Since that ancient date, however, the conception of a complete

* "Annual Report," 1856, pp. 9, 10.

fitness for teaching has been profoundly modified; so that the modern university no longer fulfils its duty to the teaching profession if it affords its students only the advantages that were offered by the ancient university. In other words, with respect to one of the most widely practised of human arts, the thought of the world has been radically changed, and the universities should adjust themselves to the new order of things.

Up to the time of Socrates the current of human thought had been directed outward, in efforts to comprehend the external and the sensible. With Socrates began the reflective movement in human thought. The eye of the soul was turned back upon itself in the effort to comprehend the immaterial and the invisible. Hitherto thought had been expended on subjects lying in the world without. Now, thought took cognizance of itself; thought was employed in the effort to comprehend thought. This arousing of the mind to an examination of its own processes formed an era in the intellectual history of the race. "The genius that spoke in the soul of Socrates," says Renouvier, "was the genius of the modern world." *

And so a crisis is reached in the history of an art when it becomes self-conscious and reflective. Hitherto, its processes had been empirical, now they tend to become rational. Hitherto, the guide had been instinct and imitation, now reason and reflection are to direct. Before, it was the hand that toiled; now the work of the hand is inspired and guided by the subtile force that descends upon it from the brain. The precious element in labor is the indwelling thought which it involves. It is this element which ennobles the workman and his work.

* "Manuel de Philosophie Ancienne," i., p. 300.

Teaching seems to be the last of the liberal arts to reach the reflective or rational period. Why this is so, it is beside my present purpose to inquire. But that this period has at last come there can be no doubt, and when it is proposed to make education a university study, it is education as a rational, and not as an empirical, art, that is to receive university recognition.

I have reason to think that the first query to arise in the mind of the college professor, when it is proposed to add the subject of education to the curriculum, is, What can be found in such a topic to engage the serious attention of an instructor? Bear in mind that every faculty-meeting is occupied with the discussion of difficult educational problems, practical, theoretical, or historical. The rustic in Molière's comedy discovered that he had been talking prose all his life, but without knowing it; and so pedagogical problems are discussed and settled by boards of trustees, teachers' associations, and institutes, by newspapers, by everybody, in fact; and still the wonder is what a professor of education can find to do! The very *naïveté* of this proceeding is charming. This is a generic illustration of the unconscious in art, and enforces what has been said as to the need of bringing the processes of the schoolroom out of the realm of the unconscious into the field of reflective vision.

Shall we now dwell for a moment on the field of inquiry comprehended in the university study of education? The comprehensive study of education must be made from three distinct points of view—the present, the past, and the future. In other words, education must be studied as an art, as a history, and as a philosophy. The art phase involves the study of schools, school systems, modes of organization and of instruction

—of everything, in fact, that pertains to the school economy of the present, at home and abroad. There is enough, even in this field, to occupy a portion of one's leisure.

The history of education, Chinese, Persian, Egyptian, Hindoo, Jewish, Greek, Roman, Mediæval, French, German, English, Italian, presents a field of almost infinite extent, too formidable to be contemplated with equanimity; and yet there is not, I venture to say, any knowledge of a higher practical value to the educators of the day than this. The great need of the hour, it seems to me, is to ascertain what has been done in the line of educational effort, what plans have succeeded, and what have failed, and the conditions under which success or failure has come. General history, that records the instinctive or impulsive acts of men, has a high order of value; but of a still higher value must be educational history, that records the deliberate plans of the wisest and the best for the good of their kind.

Vaster still, if possible, is the field of investigation presented by educational science. First note the sciences that are tributary to this composite science. The teacher deals directly and principally with mind; then, if his processes are to be made rational, their basis must be sought in psychology. But mental action involves physical conditions, and so physiology must be brought under contribution. The power developed by mental training must be brought under the control of motive, and so the science of ethics must be consulted. The organon, or teaching instrument, is language, employed as the medium of communication; and logic becomes an element in the new science. This is not all, but is enough to prove that this one aspect of educational study, the scientific,

furnishes all the material required for the most competent and the most diligent professorship. The real difficulty in the case is not at all where many have supposed it to be—in not finding enough to do; but rather in being so overwhelmed with the vastness of the field as not to know what to do first. Should any one suspect that these lines are too broadly drawn, he may consult the synopsis of lectures given in the University of Edinburgh, by Professor Laurie, and in the University of St. Andrews, by Professor Meiklejohn.

The purposes of a university professorship of education are foreshadowed in what has preceded; but these should now be more articulately defined:

1. The university may, with great propriety, be called the brain of a complete system of public instruction. Historically, the university preceded by centuries the primary school.*

The very highest institutions of learning were organized first, then followed, in process of time, the secondary schools, and finally, but only after a very long interval, the primary schools. In England, the great universities of Oxford and Cambridge date from the twelfth century: the great public schools, like Harrow, Winchester, Eton, and Rugby, from the fourteenth and fifteenth centuries; while the English public elementary school was founded in the lifetime of this generation.

In this country a tax was levied for the support of Harvard University in 1636; but it was not till eleven

*"The highest schools of learning were chronologically first. Schools for the people were not the elements out of which universities took their growth; on the contrary, schools for the people grew out of the universities."—Tappan, "University Education," p. 19.

years afterwards, in 1647, that funds were appropriated for the establishment of common schools.

It is a popular illusion to suppose that the primary school must support the secondary, and the secondary call into being the university. The first in time, the first in rank, and the first in necessity, is the university. These three grades of schools may be founded simultaneously, as in our Western States; but the logical pre-eminence of the university is still maintained. In other words, the condition of having good secondary schools is to have a good university; and the condition of having good primary schools is to have a sufficient number of good secondary schools. On this point I quote again from Dr. Tappan: "We are no more to wait for universities to grow up as the last result of a ripe civilization, than we are to wait for railroads, steamships, manufactories, commerce, and the perfect form of all the industrial arts, as such a result. On the contrary, we are to create all as early as possible, to hasten on civilization." *

Now, the deduction I make from the organic position of the university in a public-school system is this: the invigoration and perfection of the school system, as a whole, are dependent on the influences that descend from the head and brain of the system. "Progress," says a French author, "is propagated from above downwards, and this even to the furthest limits; for science never ascends."

Would we have what is best in education incorporated into the countless primary and secondary schools, the most economically and the most surely? Then whatever is best in educational history, theory, and practice must be organized and taught in the university.

* "Report," 1856, p. 12.

2. Still further, the university is the only source from which the State can be supplied with a sufficient number of highly educated teachers. With respect to the supply of teachers, a good working rule is this: *A teacher for a school of a given grade should be educated in a school of a higher grade.*

The reasons for this rule are so apparent that I need not dwell on them at any length. Of these things there can be no doubt: a teacher should know considerably more than he expects to teach; the influence of the teacher should be an open invitation to the pupil to higher walks in the intellectual life; all true education is an inspiration. Now, if the rule I have stated is a just one, it follows that the secondary or high schools of a state require a considerable body of teachers who should have a university training. And such teachers must be far more than mere scholars. If really fitted for their places, they should be masters of the educating art, and to this end they should have been instructed in the theory, the history, and the art of education. Such men and women occupy places of great influence and responsibility, and their training should make it easy for them to handle educational questions with philosophic insight and with judicial fairness. Such culture requires high scholarship, and the free and serene air of university life.

3. Again, public schools have the right to be sheltered from the errors and vagaries of empirics and mere enthusiasts.

The double misfortune of the present state of things is, that very many of those who have the direction of educational affairs are without any proper degree of professional competence, and so are the easy victims of

what is novel, or of what is pressed on their attention by the arts of declamation.

Educational hobbies are epidemic, and the evils that come to the schools from this source it would not be easy to exaggerate. My thought is this: if we would grow into a mode of educational progress that has an historic continuity, there must be a recognized source of opinion that has been formed under the best possible conditions. These conditions are supplied only by the highest institutions of learning.

4. The educating art, when rightly conceived, has all the essential marks of a profession; it has in its keeping human interests of the highest order; it requires the exercise of the highest intellectual gifts; all its processes have a basis in law, and hence its modes of procedure may be scientific; it requires knowledge of a special kind, difficult to obtain, and, therefore, within the reach of a comparatively few; the knowledge of the masses is not sufficient to afford a due protection against malpractice, and so there is a necessity for authoritative evidences of fitness.

Teaching is, therefore, a possible, if not an actual, profession, and any measure that can bring forward this consummation deserves the good-will of the general public. Now, it is an historical fact that the main strength of the recognized professions is their organic connection with great seats of learning. Law, medicine, and theology had never been professions, except on the condition of university recognition and support; nor could their professional character be sustained, if this support were to be withdrawn. The inference to be drawn is obvious: if teaching is ever to have the rank and the consideration of a profession, it must in some

way gain university recognition; and the easy and proper mode of such recognition is to make education a university study, on a par, at least, with entomology and forestry.

5. Another purpose to be served by a professorship of education is the development of educational science. There is as good a reason for investigating and formulating the principles of education as for investigating and formulating the principles of medicine and of law. In either case, the art grows in value and in dignity, in proportion as its co-ordinate science is perfected; and, in each case, the discovery of a new principle introduces a wholesome change into current practice. At the present time, education is chiefly an empirical art; most of its processes are derived from precedent and imitation, and the greater part of school work is done in absolute ignorance of conditioning principles, and a considerable part of it in violation of such principles. We expect even a grammar-school pupil to proceed scientifically in the solution of an arithmetical problem; we expect him to use the clear light of a principle as his guide through the mazes of his calculations, and we think it to his great discredit if he is the slave to a mere rule. What shall be our judgment of the mature men and women who do the work of the schoolroom by mere rule, without even suspecting that their rules, if good, have a support in some principle, psychological, physiological, or ethical?

But some one will say, a body of educational doctrine has not yet been formulated; as yet there is no science of education.

This is only partially true. From what I know of the present state of educational science, and from what

physicians have told me of the present state of medical science, I am convinced that there is a larger body of valid scientific truth within the reach of the teacher than within the reach of the physician. That is, if teachers would learn and use the principles within their reach, there would be less empiricism in teaching than in medicine. I think there cannot be a doubt that the fundamental principles of psychology are as well settled as the fundamental principles of medicine.

The strangest feature in the case, however, is still to be noted: although certain laws of mental life have been known since the days of Plato, and although succeeding centuries have confirmed them and added to their number, it is only now that even a beginning has been made in the deductive application of these laws to mental training. In our profession this is the great need of the hour; and the place in particular, and even the only place, where this work can be systematically prosecuted, is the university chair of education. This, it seems to me, should be its characteristic function.

6. With my present opportunities, I have often asked myself which would be the greater privilege, to address my instruction to professional teachers, or to the general student. When I reflect on the direct purpose of my chair, I conclude that the professional teacher should be the elect object of my efforts; but when I reflect on the following words of Herbert Spencer, I am in grave doubt. "No rational plea," says Mr. Spencer, "can be put forward for leaving the art of education out of our curriculum. Whether as bearing upon the happiness of parents themselves, or whether as affecting the characters and lives of their children and remote descendants, we must admit that a knowledge of the right methods of

juvenile culture, physical, intellectual, and moral, is a knowledge second to none in importance. This topic should occupy the highest and last place in the course of instruction passed through by each man and woman.

"*The subject which involves all other subjects, and therefore the subject in which education of every one should culminate, is the 'Theory and Practice of Education.'*" *

This extract furnishes the occasion for a large amount of serious thinking; and though there may be hesitations between the two classes of auditors we might prefer to address, one thing is beyond dispute: education, as a branch of general university study, is of at least coordinate importance with conic sections, Sanscrit, geology, and many others that might be mentioned. If we were to rank subjects on the basis of their direct bearing on the individual interests of men and women in general, there can hardly be a doubt that education would fall but a little below the head of the list. That university recognition has long been given, and is generally given, to subjects of far less relative importance, is a phenomenon in scholastic history. The exception is the more singular, from the circumstance that this subject is the basis of one of the most widely practised arts; and even still more singular, from the circumstance that the great body of professional teachers have been indifferent to the university study of a subject in which they may reasonably be supposed to feel a deep and peculiar interest. From the standpoint of the general public, this phenomenon admits of an easy explanation; as people in general have so little positive knowledge on this subject of education, they conclude that a professor of edu-

* "Education," pp. 162, 163.

cation would be without substantial functions, without, in fact, anything to profess.

Whether this mode of thinking may or may not extend to our profession, I will not stop to inquire. The general conclusion to which I am brought by this train of thought is, that education has a valid right to be made a university study, quite independently of its professional bearing, but solely by virtue of its high general utility as a branch of human culture.

I must now return to a theme that was suggested in the earlier part of this discussion, the bearing of the university study of education upon the status of normal schools. No belief is more firmly impressed on my mind than that normal schools had their origin in the necessities of our civilization, and that they will always remain permanent factors in our educational history. As already stated, they are the exponents of a marked advance in public opinion as to fitness for teaching. They not only supply a need that will always be felt, but there will be a steady rise in their appreciation as the subject of education becomes better understood.

The ground for this belief will become evident from a slight examination. In the teaching force of the country, the volunteers or irregulars very largely outnumber the standing or regular army. For ten who teach from year to year as a regular vocation, there are a hundred who intend to teach, and who actually do teach, only two or three years on the average. So far as can be seen, this state of things will continue indefinitely.

Now, some kind of professional preparation should be required of this large class of teachers. What shall it be? Shall they be expected to pursue a liberal course of study in college or university, and to become versed

in educational history and science? It is folly to dream of such a consummation. The most that can be expected, with any show of reason, is that this preponderant body of teachers receive a good secondary education, and, in close connection with it, instruction in the most approved methods of doing school work. This, I repeat, is the utmost that can be expected of the transient members of the teaching profession. Here lies, as it seems to me, the function of the normal school. As yet, only a small part of the teaching class has been affected by the normal school; but, with the growth of juster ideas as to fitness for good teaching, there will surely come a growing demand for normal instruction; so that an adequate appreciation of the normal school is yet to come.

What can give extension and intensity to the conviction that all who purpose to teach should have some formal preparation for their duties?

I can see no other means so effective as the declaration by the highest academic authority, that something besides general knowledge is essential for fitness for teaching. Note the implication: if the highest attainable scholarship is not of itself sufficient to constitute fitness for teaching, then surely the lower scholarship must be supplemented by some special form of professional training. It seems to me to follow inevitably, that the most direct and most effective means of emphasizing the value of normal schools, and of extending their field of usefulness, is the university recognition of the teaching profession.

In what way could a university course of instruction in teaching affect a normal school injuriously? In the first place, there is no ground for competition. How

can a university compete with a secondary school? It is only after a pupil has completed the academic course in a normal school that he is prepared for admission to a university. As there can be no competition there is no ground for jealousy or ill-will, provided there is a recognition of the fact that the public-school service of the state requires of some of its teachers a higher grade of scholarship than a normal school can afford. To employ Dr. Tappan's phraseology, "The graduate of a secondary school is not prepared to instruct a secondary school." In other words, the high schools of a state require the services of men and women who have had a college or a university training. And if certain schools require a higher academic training than a normal school can give, so they require a higher grade of professional education—instruction in doctrines and principles, rather than in methods.

Below the third year of the high-school course, normal-school training may suffice; but above the second year, university training is requisite.

When normal schools are charged with the whole burden of professional preparation, they naturally and perhaps excusably fall into the error of attempting to do what they are incapable of doing, and so of neglecting to do, in part, what it is their natural function to do—to supply the ungraded schools, and the first ten grades of village and city schools, with trained teachers.

The adjustment that is to come simply exemplifies the law of the division of labor, the normal school doing what its constitution permits it to do, and declining to do what it is unable to do, and the university doing what its higher organization charges it with doing. When the

professional education of teachers has attained its proper adjustment, it will be seen that teachers in normal schools should have a university training.

Under no other condition can the work of these schools be done with a breadth of view that is essential for high excellence. The almost inevitable tendency of a lower culture is, on the one hand, to subdivide and minimize more than is meet, and, on the other, to exalt trifles to unwarranted proportions. It is the remark of a recent French writer that, "after all, nothing so much resembles a man as a child. In truth, he is already a man, if not in fact, at least in possibility, and it is important at an early hour to call into exercise, by degrees, it is true, his innate powers of abstraction and generalization. In these days we are too much inclined, perhaps, to forget this point."* This, it seems to me, is a wholesome truth often forgotten by those who train teachers. The child should not be educated in sections, but the whole complex organization should share in a general forward movement. Sense training, for example, is not the exclusive prerogative of the child, but should be employed in due measure in all grades of instruction; and so reflection is not the exclusive prerogative of the adult, but even the child participates in its due exercise. I believe that the source of these errors is a limited intellectual culture, that misinterprets a part because it has never comprehended the whole. This minimizing tendency has certainly brought reproach upon systematic teaching; and the only remedy that I can see is a liberal training, both general and professional, for those who are moulding the lower education of the times.

In order that the professional study of education in

* "Dictionnaire de Pédagogie," I^ere^ Partie, p. 1425.

universities may be placed upon a proper footing, three conditions seem to me to be absolutely required.

1. The professorship of education should be co-ordinate in rank with other professorships. No other professorship has a more extensive field, or a field more peculiarly its own.

An inferior rank would carry with it an implied inferiority of worth that would compromise success from the very beginning. The work of such a professorship is too great, especially at this formative stage, to permit the doing of any other professional work in conjunction with it. A divided allegiance would seem to me very unwise.

2. These courses in education should count towards a degree, just as other courses do. This is too obvious to deserve further remark.

3. A university degree, earned in part by work done under this professorship, should be a life license to teach. That a degree representing such an amount of academic work in addition to the courses of professional instruction, should be of at least co-ordinate value with a normal-school diploma, seems to me too evident to permit discussion. To this extent, certainly, young men and women should be encouraged to attain the highest grade of preparation for the public-school service of the state.*

With respect to practice in connection with instruction in the principles of teaching, the current opinion is so unanimous and so decided as against my own thinking, that it is to be presumed that I am wrong. However, I suppose I am not thereby debarred from expressing an opinion.

* This topic is discussed further in the Appendix.

The fundamental idea of professional instruction is, that the inexperienced are to be taught to do by knowing. In medicine, it is only the quack who professes the dogma that he should learn to do by doing.

The true doctrine I suppose to be this: First know, and then, on the occasion of experience, perfect your knowledge by doing.

There is now a wide-spread denial of the vitality of knowledge, if I may use this expression; that is, the inherent tendency of belief to mould the conduct, to embody itself in act, or to evolve a method out of a theory, is generally denied. How baseless this assumption is, we may see from the natural history of prejudices, and still more clearly, perhaps, from the weekly item relating how the dime novel displays its effect in marauding expeditions and midnight burnings.

The outcome of beneficent thoughts and purposes, though not so obtrusive, is yet as constant a phenomenon.

Now I would base the higher professional education of teachers on the assumption that a clear conception of what is to be done constitutes the best attainable preparation for actual work. I am here speaking, let it be remembered, of practice schools for university students. Schools of observation have an admitted value. They serve the same purpose as clinics in medical education. But in each case the aid comes from seeing good models, not from doing. The instruction is still theoretical. My objection to practice teaching in such a case as the one now under consideration is, that it is unnecessary, and that it is so unlike one's real work as to be misleading.

Let it be observed, again, that I am not discussing the experimental teaching done in normal schools. Here

the conditions are changed in some important respects that cannot now be noted; but even here, I think it may at least be questioned whether the value of this empirical instruction has not been overestimated.

A university student going to his work with clear conceptions of what he is to do, and a normal-school student going to his with methods ready to his hand, will be found to have different histories, as a general rule.

The first will be likely to stumble, will start rather clumsily, but will soon recover and improve to the end of the race; while the second will start promptly and in good order, but will then be slower in his progress, and will finally be out-distanced by the teacher having the greater reserved power.

And now, a very brief historical notice of the movement I have discussed will conclude this discussion.

In English-speaking countries, distinct chairs of education in universities have been established as follows: In Edinburgh and in St. Andrews, Scotland; in Acadia College, Nova Scotia; in the Universities of Missouri, Michigan, and Wisconsin, and in Cornell University. In the Universities of Cambridge and of London there are courses of lectures on education, but no professorship of education; in the University of Iowa the professor of mental and moral philosophy lectures also upon education; and in various colleges there are normal departments.

This new movement is one that is destined to form a turning-point in the history of the educating art; and in this movement there is a complete solidarity of interest. The question chiefly at stake is the ennobling of the teaching profession; and in this question every teacher of every grade has a living personal interest. Nay, more; the interests of every citizen, irrespective of rank or call-

ing, are involved in this forward movement, for, as Horace Mann has said, "No subject is so comprehensive as that of education. Its circumference reaches around and outside of, and, therefore, embraces all other interests, human and divine."

CHAPTER XVI.

THE NORMAL-SCHOOL PROBLEM.

The special question that I propose to discuss is this: "Has the time come for a radical change in normal-school courses of study?" Any adequate treatment of this theme makes necessary a discussion of the larger question which I have ventured to call "the normal-school problem." At the very outset, it will doubtless be granted that the organization and management of this class of schools is still a problem. If any one has reached absolute assurance in this matter, it must be because his information, or his range of thought, is very limited. We will recollect that this question is relatively a new one. The methodical discussion of the general educational problem was begun in earnest twenty-three centuries ago; while the germ of the normal school was dropped in the soil of the seventeenth century. Even now we have scarcely a firm grasp of the main elements of the general problem of education. It is, therefore, little less than presumption to think that this new problem has reached anything more than a provisional solution.

We are now passing through the period of discussion, and hence of disagreement. There is no longer that unanimity which comes from ignorance and indifference; but beyond this period of dissent there will, doubtless, come the era of substantial agreement, when the characteristic phenomenon will be growth under pacific conditions.

To use Mr. Spencer's phrase, one of our highest duties is "to take stock of our progress," to review our mode of doing business up to date, to estimate the net results of all our efforts, and, in view of what has been and of what ought to be, to make those readjustments which the situation demands. Wise revision requires both retrospection and prevision. That our progress may be safe, the knowledge of what *should be* is quite as essential as the knowledge of what *has been;* and that we may advance with reasonable rapidity, this reflective taking of stock should be made at not infrequent intervals.

In all humanitarian enterprises, these deliberate revisions are the more necessary from this circumstance, that while, for the most part, they owe their origin to a powerful sentiment, this motive will in time spend itself, and must then be replaced by an impulsive force of the logical type. Feeling will cause a great movement, but, in the end, it must be defended and sustained by reason. One of the most inspiring pages in American educational history is that on which is told the story of the planting of the first normal school in this country at Lexington, Mass. If I interpret this history aright, the movement which culminated in the establishment of this first American normal school was due to the ardent zeal of a few enthusiastic friends of popular education, rather than to the logical deductions of the thinker. The sanguine expectations of these noble spirits are most pathetic. They seem to say, "The fate of the commonwealth depends on the right education of the youth; the quality of the schools depends on the learning, virtue, and skill of the teachers; but good teachers cannot be improvised, they must be men and women who have set themselves apart for this high service, and who have been especially

trained for its difficult duties." The all-important thing, therefore, is the teachers' seminary. Give us this, and our best wishes for the commonwealth will be fulfilled. This, in brief, is the story of this movement as it comes to us from the pages of a half-century ago, and it is typical of all similar movements. Western towns sometimes spring up, as it were, in a single night; and without established industries, or even a fixed population, a heavy tax is levied for the building and equipment of a high-school. The enterprise owes its origin and completion to popular zeal, and often to a zeal not at all according to knowledge. Before the mortar has been well hardened, the tax-gatherer destroys the illusion, and then the enterprise that was born of sentiment is saved, if indeed it be saved, by argument.

I imagine that if the venerated men whose hearts were gladdened by the final triumph of their hopes, could speak to us, they would confess their disappointment at what has been accomplished by the normal schools during the half-century of their existence. The improvement in the status of the teaching profession has not been as marked as they anticipated. Instruction has not improved in quality to the degree they dreamed; and perhaps more than in all else, they would feel a disappointment in the popular appreciation of teachers' seminaries. And if their voices could reach our ears, I doubt not they would counsel us to revise our ways, to the end that the normal school may be the better equipped for its mission.

However good and earnest our intentions may be, it is doubtless impossible for us to rid ourselves of the disturbing influence of personal bias. Looking at the same object from different points of view, our impressions and

our conclusions can hardly fail to be different. So far as the formation of an accurate judgment is concerned, nearness to an object and remoteness from it are equal misfortunes. In both cases we are the victims of false perspective. We see either too much or too little.

An architect that should direct the building of a pile wholly from within would incur the gravest risks of miscalculation; his safety would lie in receiving the impressions of another who had studied the general effect from a normal distance. "He who builds a house," says Aristotle, "is not the only judge of it." Ownership not only reconciles us to what we may chance to have, but may even conceal from us the defects that are as open as the day to others. On the other hand, it is easy to disparage what is not our own, especially when there is the least motive for such disparagement. The conclusion of the whole matter is, that we shall gain rather than lose by the comparison of presentations that have been gained from different points of view. Provided our studies have been patient and thorough, and we are obedient to the laws of candor and courtesy, such comparisons of views cannot fail to be fruitful.

I feel bound by a sense of fairness to state that in the actual administration of normal schools proper, I have had no experience. As to the limitations that are due to material, time, and the needs of the schools, I can judge only by reflection on the facts coming to me at second hand; and much as I may wish to put myself in a nearer position, I can do it only through imagination, and thus, of course, imperfectly. Besides, partly from the necessities of my position, and, perhaps, even more from predilection, I feel most interest in the theoretical aspect of normal instruction; while those who are in actual

charge of normal schools feel impelled to study this problem mainly from its practical side. But if we grant that this theme has these two aspects, the theoretical and the practical, that there must be a theory of teaching because there is an art of teaching, it is clear that we shall gain by looking at the normal school from these two distinct points of view.

"Studies," says Bacon, "are perfected by experience." Men of action, held responsible for results, are adequately protected against the dangers of theorizing. Many minds are suspicious of ideals. I cannot think that we have anything to fear from the steady contemplation of the normal school as it ought to be. I know that the ideal school, even if we could have it, would be impracticable. Working schemes must be adapted to the imperfections of those who manage them, and of the material on which they operate; but we are all weighted in the race we run; our clumsy fingers can never execute the divine pattern seen in our mind's eye; the utmost we can do is to approach our ideals; we shall never reach them. Whether in morals, in art, or in action, aspiration after the ideal is the very condition of progress.

As a step somewhat nearer my final purpose, let me state some propositions on which there is probably no difference of opinion.

1. The normal school is not only an essential instrument of educational progress, but is itself a product of that resistless on-going which we term civilization. Illuminating gas, coal oil, the electric light, the printing press, the telegraph, are not so much inventions and discoveries as growths; each of them echoes, as it were, the voice of fate; their not coming is inconceivable. And so the normal school was one of the products of the

times; its coming could not have been considerably hastened, nor could it have been prevented; it came in response to certain needs, and it has come to stay. Its mission is as definite as that of the common school, the college, or the university. As it was the product of a growth, it will itself exhibit all the essential phenomena of growth. The functions it first performed were responses to the scholastic needs that were then most pressing; but as there is continuous growth in the conception of education, the needs of the schools will suffer progressive changes, and so the functions of the teachers' seminary must necessarily pass through a series of upward transformations. I think we must go further than this, and say that the normal school should not merely keep an even pace with the educational thought of the times, but should be itself a leader in educational thought. It should "allure to brighter worlds and lead the way." In its doctrines and methods it should anticipate the needs of the times, and should give conscious and even authoritative direction to both educational theory and practice. Those who are charged with the administration of normal instruction should occupy the very outposts and watch-towers of educational progress. For these high functions there is necessary not only a knowledge of all past achievements in the line of educational thought and action, but a rational cult of ideals that will permit some degree of prophecy. The fact is, the era of normal instruction has only just begun. It remains for our successors, near and remote, to possess and cultivate a land in which we are pioneers and pilgrims.

2. From an early date it must have been observed that there were teachers and teachers; and as the contrast between the lettered and the unlettered became less and

less obvious, the contrast between good teaching and poor teaching became more and more obvious; and as this observed difference could not be ascribed to mere differences in scholarship, it was attributed to good and bad methods. Under this higher conception, the two main features in a teacher's preparation were matter and method, and no doubt greater emphasis was given to method, from the circumstance that elementary instruction had now become of pre-eminent importance. Mature minds can be left largely to self-direction; but the young are dependent on the art and skill of those who instruct them. The preoccupation of the ancient teacher was the mature mind, but of the modern teacher, the immature mind. The exponent of the conception that method is an essential element in preparation for teaching is the early normal school.

The moment method becomes an object of deliberate study, a comparison of methods becomes inevitable. In teaching the instrumental art of reading, for example, the phonic, the phonetic, the word, and the sentence methods are brought into vigorous contrast and become rivals. Out of this discussion there issues the necessity for a final and absolute test or criterion; and this criterion, of course, turns out to be a psychological law. The problem of primary reading thus permits a scientific solution, and it is an easy step to the inference that a teacher should not only be furnished with good methods, but should also know the scientific basis of method. It is in this way that the art of teaching is now passing from the old time empirical stage into its future and permanent rational or scientific stage. It cannot be said that we are now fairly living in this new order of thought. The most that can be affirmed is that some principles are recognized by

some teachers, and that there is a growing disposition to study fundamental doctrines. The ideal teacher is not merely to be wise, as the primitive conception of fitness required; nor yet to be furnished with matter and method, as the better current thought demands; but is to superadd to these necessary acquirements a knowledge of the principles, physiological, psychological, ethical, and sociological, that underlie the educating art. It is refreshing to observe that the pioneers in the normal-school movement in this country proclaim with one accord the importance of the study of the theory and history of education; but these utterances are to be regarded as prophecies of what should ultimately be, rather than as prescriptions for immediate adoption. It is certain, I think, that, even in the aggregate, the normal schools of the country have made only slender contributions to the science of teaching. I intend this remark to be the statement of an historical fact rather than a criticism. My main purpose in this paragraph has been to show that a new and final stage has been attained in the conception of fitness for the teaching office, and to suggest that the normal schools of the country should adjust themselves to this ascendant order of thought.

3. Another proposition in which we shall doubtless all agree, is that one essential characteristic of a real teacher is that high quality of soul denominated culture. I imagine that this term escapes rigorous definitions, though we instantly recognize the quality when once in its presence. I know of nothing that comes nearer a definition of culture than Plato's conception of the philosophic character. In Jowett's version it is as follows: "A lover, not of a part of wisdom, but of the whole; who has a taste for every sort of knowledge, and is curious to learn,

and is never satisfied; who has magnificence of mind and is the spectator of all time and all existence; who is harmoniously constituted; of a well-proportioned and gracious mind, whose own nature will move spontaneously towards the true being of everything; who has a good memory, and is quick to learn, noble, gracious, the friend of truth, justice, courage, temperance."* Perhaps we might summarize this statement, and say that the essential qualities of culture are as follows: comprehensiveness and elevation of mind; a quenchless zeal for knowledge; grace and harmony in mental endowments; an ardent love of whatever is true, beautiful, and good; an educated will that moves spontaneously towards the right. Such an ideal as Plato has here drawn is the ripened fruit of a whole lifetime of training. During the ordinary period of education, the process that leads to this final result can be hardly more than well begun; but we will all agree that the tendency of the school from first to last should be towards this Greek ideal of a perfectly matured soul. What I wish particularly to insist on is that the nurture of the normal school should be such as to bring the teacher himself well on his way towards these high accomplishments, to the end that he may lend a kindred inspiration to those who may fall under his influence. Or, if this is expecting too much, there should at least be a kindling of that noble zeal which makes possible the attainment of some kind and degree of culture. I cannot conceive that any man or woman is fit for the teaching office unless he "has a taste for various sorts of knowledge, and is curious to learn, and is never satisfied." A primary school that does not create something of this spirit, or a secondary school that does

* "Republic," 475–487.

not create a marked degree of it, must be counted as essentially a failure; while in a normal school it seems to me that it should be the dominating spirit.

4. It would doubtless be thought a great misfortune if the professional life of physicians were, on the average, no longer than three or four years. In such a case human life would be constantly exposed to the dangers of empirical practice, for within this short period the physician's previous studies, however careful they might have been, could be only very imperfectly perfected by experience; the work done under such circumstances would necessarily be crude. Still further, in anticipation of this short period of service, the preparation would be hasty and superficial, and very likely the average grade of ability employed in this avocation would not be high. But the culminating effect would be a slow and halting progress in medical science, for there would be no opportunity to capitalize the perfected fruits of experience. This hypothetical case describes the actual condition of the teaching profession, and permits us to see the need of encouraging, in every possible way, a lengthening of the teacher's term of office, so that this employment shall become a vocation rather than an avocation. That there will always be a considerable transient element in our profession seems certain, and this fact shows the need of giving our serious attention to three things: This transient membership should be made relatively less than it now is; the work should be directed by what Plato calls "true opinion," * or the matured results of the best thinking; and the perma-

* "And the lawgiver, reviewing his work, will appoint guardians to preside over these things, some who walk by intelligence, but others by true opinion only."—"Laws," p. 637.

nent membership should be greatly increased by holding out as an inspiring motive the hope of an honorable career. This brings me to the special observation I wish to make. As the normal school is a professional school, its nurture should be such as to supply its pupils with motives sufficient in kind and intensity to make them zealously inclined towards teaching as a permanent calling. For this purpose, the main essentials are four: There must be a general intellectual quickening, so that there shall be developed and established a love for the scholarly vocation; there must be a feeling of hearty respect for the teaching service, awakened, as it seems to me, by a knowledge of educational history; there must be an outlook into the future which will disclose the possibility of invention and discovery, a result to be reached only through the study of educational science; and there must be a thorough infusion of the scientific spirit as distinguished from the spirit of tradition and routine.

The accomplished teacher should be a man of science, in the sense that the accomplished physician is a man of science. I am persuaded that the motive which most attracts minds of the higher order into certain vocations is the opportunity for the free exercise of tact, talent, ingenuity, invention, discovery, and all the resources of a well-stored and well-disciplined mind. Minds of the better order love to take chances, to run risks, to anticipate the new, and to compass by sagacity some victory over danger and difficulty. To all such minds, the possibility of achievement is an inspiring motive of the highest order.

I will now turn to another set of propositions, where, possibly, there will be more or less dissent, arising, prin-

cipally, from different points of view. I find no pleasure whatever in disagreement, and whenever I express dissent it is out of loyalty to what I think to be the truth. Neither have I any over-confidence in my own opinions, for I can heartily subscribe to this sentiment of Helvetius: "J'ai trop souvent trouvé mauvais le soir se que j'avais cru bon le matin pour avoir une haute opinion de mes lumières." * Particularly in one of the matters I shall mention, I cannot resist the feeling that I must be wrong, because my opinion is opposed to the one held by so very many who have better opportunities for knowing. But even in this case I am sure I shall be pardoned for trying to express what I seriously think, especially as my single purpose has been to find the truth.

1. I am conscious of the danger I incur of seeming to say more than I mean, or to underrate the importance of one factor in the elements of a teacher's preparation. I believe the importance of empirical method has been greatly overestimated, and that this over-esteem has obscured the necessity of generous scholarship. Method has been so detached from the *tout ensemble* of teaching, and has received such stress of attention in the way of study and practice, that, to some extent, it has played the part of usurper. Of the conditions under which method is best learned, I shall speak further on. What I wish to say at this point is, that important as method must be allowed to be, it cannot be accepted as an equivalent for scholarship; and that if, by the *rôle* now assigned it, or by the manner in which it is taught, the value of high literary culture has been obscured, the normal schools of the country have fallen into a serious error. It is my

* "De L'Esprit," preface, p. ii.

belief, founded on observations of the work done in representative normal schools, as well as on the history of teachers educated in such schools, that the imminent danger is that of slender scholarship. Without saying that less stress should be given to method, it seems to me that much more stress should be placed on literary culture. If the Platonic conception of culture be kept in mind, I think I shall not be misunderstood when I say that a graduate of a New England seminary, or of a New England college, with no other knowledge of method than he may have imbibed from his own scholastic training, is more likely to become a living power in the schoolroom than one who has pursued a secondary course of instruction while preoccupied with the study of method.

2. The ground for the last remark is the following proposition, the truth of which seems to me to admit of but little doubt: *A study pursued with direct reference to practical ends loses a considerable portion of its culture value.* That this doctrine is supported by authority of such weight as Plato's is proof that there is some ground for thinking it true. Plato's antipathy to what we call practical studies is well known. Thus, he says of arithmetic, "It will be proper to enforce the study by legislative enactment, and to persuade those who are destined to take part in the weightiest affairs of state, to study calculation and devote themselves to it; . . . not cultivating it with a view to buying and selling as merchants and shopkeepers, but for purposes of war, and to facilitate the conversion of the soul itself from the changeable to the true and real." * Throughout his entire discussion of the educational question, Plato is concerned

* "Republic," 525.

with the disciplinary or culture value of studies; the mind is to be made the perfected instrument of thinking, and the soul is finally to be brought to the contemplation of pure truth; the attainments most to be desired are self-poise and a sense of unity and completeness. This upward movement of the soul, as Plato thought, is checked and destroyed by descending to practical activities. Unity and wholeness are essential to culture, the utilities disintegrate and destroy. The broad contrast is here between the practical value of a subject and its value for culture, and the thought seems to be that as integration is essential to culture, and disintegration equally essential to art, the two processes are antagonistic. For example, the culture value of a piece of literary art, as the "Paradise Lost," will be destroyed by making the poem a parsing exercise.

Now, from this general truth, which I have attempted to illustrate rather than to discuss, it is but a step to the inference that a general training and a technical training are incompatible when conducted simultaneously; or that, if a pupil is preoccupied with the utilities which his course of study may serve, he is thereby debarred from the privileges of intellectual culture. In the matter of normal-school instruction, the case, under the foregoing hypothesis, will stand thus: in proportion as the technical element is brought into prominence, the course of study will lose its culture value, and by so much will diminish the real teaching power of the pupil. Of course, this conclusion is based on the assumption that no teaching of high excellence is possible without a confirmed love of letters and a considerable degree of literary culture.

This view, as to the effect of concurrent general and

technical training in normal schools, is by no means new. Thus, in his "Training of Teachers," Mr. Laurie observes that "the moment we substitute a distinct practical purpose . . . as the exclusive aim of education, and arrange the whole machinery of an institution to attain any one of these ends exclusively, the mental life of the student becomes at once narrowed, and education in the higher sense disappears altogether" (p. 11). To the same effect is this quotation from Mr. Fitch's "Lectures on Teaching:" "It is not good that this science, or, indeed, any other science, should be mainly pursued *per se*, in separate training institutions or professional colleges, where the horizon is necessarily bounded, and where everything is learned with a special view to the future necessities of the school or the classroom" (p. 5).

3. In the next place, this many-sided problem requires us to note the effect of habit on growth. I have been impressed with this remark by Mr. Sully, in his late work on Psychology: "Habit refers rather to the fixing of mental operations in particular directions. Taken in this narrow sense, habit is in a manner opposed to growth. By following out a train of ideas again and again, in a certain way, we lose the capability of varying this order, of readapting the combination to new circumstances. Habit is thus the element of persistence, of custom, the *conservative* tendency, while growth implies flexibility, modifiability, susceptibility to new impressions, the *progressive* tendency" (p. 49). To this statement I think the following observation should be added: The bad effect of habit in checking growth and versatility is great in proportion as the range of intellectual vision is narrow and the degree of mental discipline low. Meagre scholarship succumbs to routine, liberal scholar-

ship not only escapes its tyranny, but may dominate habit. There can be no versatility without breadth, and, at the best, breadth of scholarship is of difficult attainment in secondary schools; so that it seems to me a dangerous procedure to train pupils of a normal school into fixed methods of teaching, based on authority, at least before they have been instructed in doctrine. The fear is that through preoccupation with the study of method, and through the illiberal effects of fixed habits, there may not be that quickening into the intellectual life which is, of all gifts, the most precious endowment of the teacher. My observations have been confined chiefly to Western normal schools and the teachers they have educated, and I have been struck with the fact that only a very few, comparatively, of those who have had their training in these schools manifest a decided love of letters; in some way the greater number seem to have escaped this contagion of noble minds.* If this is generally true, the phenomenon must have some general cause for which there should be diligent search, and in these two paragraphs I have attempted to give what appears to me a probable explanation.†

It should be added that, according to one conception of

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*"A training college where every student belongs to the same social stratum, and pursues the same course, with the same profession in view, gives little room for free play of mind and character. It may mould and moderate the average student, but it stunts, if it does not warp, the choicer spirits."—*Journal of Education* (London), July 1, 1885.

†Rousseau's love of paradox should not lead us to overlook the essential truth that is contained in this declaration: "The only habit a child should be allowed to form is to contract no habits whatever."—"Émile," Miss Worthington's translation, p. 24.

the normal school, what I have ventured to speak of as a fault would be esteemed as a peculiar excellence. I have heard it maintained by two distinguished educators that the most desirable endowment of a teacher is mechanical exactness and expertness, and that freedom and versatility are dangerous. This much must be conceded: if the teacher is illiterate it is best that he should be a machine; but if it is allowed that the teacher should be scholarly, he must be granted the largest play of tact, talent, and invention. Only typical uniformities in method should be insisted on; in dealing with spirit, analogies drawn from the manipulations of matter are full of danger. Within what I have called typical uniformities, a teacher's method should have the characteristic stamp of his own genius and personality. For example, following the general law of presentation, the sequence will uniformly be from aggregates to elements, and then from elements back to aggregates; but, in the details of practice, there may be within the sphere of this law the greatest diversity of procedure. No two good teachers of the word method or of the sentence method will conduct a recitation in reading in the same fashion.

4. Another preliminary statement that seems to me essential to a proper understanding of the normal-school question is this: *one should know considerably more than he expects to teach; his grade of scholarship should be considerably higher than that of his pupils.* The reasons for this rule are obvious: a teacher who is compelled to work nearly up to the limits of his scholarship loses his self-respect, and so misses the necessary support of moral courage; a clear perspective can be gained only from a considerable eminence; the parts of the educating process that fall within the province of the individual teacher

should be seen as they are related to a comprehensive whole; and, perhaps more than all else, a teacher cannot create among his pupils an inspiration after higher attainments, unless his own example is an open invitation to covet the highest gifts. If this general doctrine is true, it seems to me to warrant the following rule: A teacher for a school of a given grade should be educated in a school of a higher grade. If the education of the country could be administered under the spirit of this rule, two or three generations would suffice to exhibit a marked elevation in the intellectual condition of the people. When the typical Scotch schoolmaster held a diploma from Glasgow, Edinburgh, or Aberdeen, the type of intellectual life, as a prevalent fact, was higher in Scotland than in any other country in Europe, and decadence in this intellectual superiority set in when the university graduate was displaced by men who had received their training in schools of secondary instruction.

5. The last of the debatable questions that the purpose of this chapter requires me to discuss is this: Is academic instruction a legitimate function of the normal school, or should this school assume that its pupils have a competent knowledge of subjects, and then concentrate its efforts on purely professional work,—instruction in method and doctrine? This is a very clear case in which a seeming, but perhaps mistaken, ideal is practically impossible. There is no doubt, I think, that, in general, professional instruction should be something superadded to a general or liberal education, and administered apart. The complete man should be formed first, and then he should be converted into an instrument. For example, the physician should first receive the best intellectual

training that is attainable, and, when this has been completed, he should concentrate his whole attention on the special studies that his profession requires. And so for the lawyer and the clergyman. In all these cases, the knowledge that is acquired during the course of liberal education is not knowledge that is necessary for professional use; but in the case of the teacher, the matter that is learned primarily as literature or science is, at the same time, an essential part of his professional equipment. It thus happens that every good school, in a true and very important sense, fulfils two of the essential functions of a normal school: it communicates the knowledge which the teacher must in turn communicate, and it exhibits methods which he may adopt in his own practice. We shall be quite near the truth in stating that the function of the superintendent is to reproduce the school in which he was educated, and that the function of the teacher is to reproduce a part of the school in which he was educated. When we say that the school to be reproduced, wholly, or in part, has first been transformed into an attainable ideal, have we not stated the whole truth? Manifestly, if there is to be only an exact reproduction of the actual school, there can be no progress in education. A new factor must be incorporated into each reproduction, so that there shall be at least an arithmetical cumulation of improvements. Whence is this new factor of rising magnitude and value to be supplied? This, I imagine, is the peculiar function of the normal school. We might here make a proximate definition of the normal school as follows: a model school of secondary instruction, whose pupils purpose to become teachers, and are fitted to do educational work of a higher type through some mastership of the history and

the science of education. Save in the last particular, this is the historical conception of the normal school. This term was evidently borrowed from the French, and in a debate of the convention in 1794, Lakanal defined it as follows: "Normal, from the Latin *norma*, rule. These schools are to be, in fact, the type or the standard for all the others." *

The main elements of this problem, as I have conceived it, have now been brought forward; and it remains only to state my conclusions in the form of a general summary, with such explanatory discussion as may appear necessary for the sake of clearness.

1. The three distinctive aims of the normal school are SCHOLARSHIP, METHOD, and DOCTRINE. There is doubtless great unanimity in recognizing the fact that these are the three elements of a teacher's professional education which the normal school should give. The questions in dispute relate to their relative importance and to the manner in which they should be pursued. The following paragraphs will indicate the line of thought into which I have been almost insensibly drawn.

2. Of the three elements I have named, I believe that pre-eminent importance should be assigned to scholarship. First of all, the teacher must be a scholar, and no part of his professional education must be conducted at the expense of scholarship. Under scholarship I would include some sensible degree of literary culture, one indication of which is a pronounced love of good books. The course of academic study should be, in the truest sense of the term, liberal. The specific discipline yielded by such subjects as arithmetic, algebra, geometry, grammar, and physics should be relieved by the three culture

* See "Dictionnaire de Pédagogie," article "Normales."

subjects that fall within the range of secondary instruction—geography, history, and literature. Latin and one modern language, say French, seem to me indispensable for the purpose I have in view. I name French because the fruit-bearing stage can be reached so much sooner in this language than in German, and also because much of the pedagogical literature that it is so desirable to read is now to be found in this language. The ability to read with ease a book in another tongue gives the student a delicious sense of power which will foster the scholarly spirit. While in pursuit of scholarship as here considered, I wonder if I am wrong in thinking that the pupil's mind should not be kept intent on the technical uses which each study is hereafter to serve. It seems to me that I am not. At least, I would not have pupils preoccupied with hourly anxieties about the demands of the classroom. It is not prevision that I am discouraging, but a certain sort of prevision. A comprehensive scheme of life that is most befitting a rational creature must exclude anxious questioning as to what we shall eat, or what we shall drink, or with what we shall be clothed. These subordinate purposes are all included in a wider and higher purpose, and they are best provided for by a living allegiance to the needs of the higher life. I suspect that this truth has a direct bearing on the intellectual life of the teacher.

It may be added that normal schools have special need to guard the conditions of intellectual culture. Their pupils, for the most part, have missed the opportunities for a careful elementary training. At the age of sixteen or eighteen the boy at the country-side obeys an impulse to fit himself for the public-school service, and so repairs to the nearest normal school. In this he does well; but,

from the lack of systematic intellectual training, there will be more or less ingrained resistance to the influences of the new scholastic life. In the university with which I am connected students over twenty-one years of age are admitted to certain studies without passing the usual entrance examinations; and, with reference to some of these, the remark is not unfrequently made, "He began too late!" I believe that this remark indicates the intellectual condition of many students in normal schools, and, if so, a somewhat extraordinary effort must be made to stimulate such minds into an activity which shall be self-sustaining.*

3. I now turn to the question of method. Let us begin by saying that method is *the way to an end;* and that the sum of a teacher's methods constitutes his art. Let it be premised also that a clear and definite knowledge of the ends to be attained by the study of the various subjects constitutes a considerable part of the science of method. For to know our destination is to know, by implication, the route over which we must pass to reach it. The other source of prevision is some law or principle, usually psychological. Knowing the end to be attained, as in reading or arithmetic, ingenuity will suggest certain means. Some of these will be rejected because they contravene a psychological law, while others are adopted because they are in accord with such law. This method of learning method may be called the scientific or rational, and will be further noticed in the next paragraph.

Method may be taught by dictation, as when we read

* The membership of the New England normal schools is composed very largely of high-school graduates. In all such cases the danger I refer to is greatly diminished.

books on pedagogy, or listen to lectures on the art of teaching; that is, we are advised or directed to follow certain rules or processes on mere authority, the reason being scarcely consulted in the case. This mode of procedure is exposed to all the objections that lie against the use of mere rules. Rules, we know, are indiscriminating. They do not take into account quantity, quality, time, or place. They leave little or no liberty for choice, and so do not cultivate versatility. As mere knowledge, rules are unfruitful, as their action is limited with almost fatal precision, while their reaction, in the way of discipline, is narrowing and hardening.

The better aspect of method taught empirically is this: the aggregate of such instruction may result in the formation of an ideal, more or less clear and adequate, of the school and its mode of administration, and so may serve a good purpose in the work of reproduction that has been previously noted. Besides, if we must choose between a rule-taught teacher and one who knows neither doctrine nor exact method, we should not hesitate to select the first. Mechanical positiveness and exactness are incomparably better than ignorant uncertainty and vagueness. It has been said that this mechanism is all that many teachers can attain to. If this be true, and if such teachers cannot be spared from the public-school service, then this way of learning method has considerable in its favor.

In the third place, method may be learned from observation, as in a school conducted by a skilful teacher, frequented on occasion by pupils in training; or in the informal, almost unconscious, way which makes of every school a normal school, and of every pupil a possible teacher. As before stated, I believe that this was the

original conception of the teachers' seminary, that it should be a model school which might be reproduced by pupils who had learned the art of teaching from imitation. This method has the obvious advantage over the one last stated that it is a study of the concrete instead of the abstract. An obvious disadvantage is that the school studied may not be the type of the one that is to be produced. This danger is sometimes avoided by having a model school which represents all the grades of a public school.

Strictly speaking, I know of no other ways of learning method than those now discussed—the scientific, the empirical, and the imitative. Practice-work will be suggested as a fourth, but it is plain that the method must be known before even an attempt can be made to put it in practice. Practice, or, as it is more properly called, experiment, merely serves to make a method more completely known. But practice-work, in connection with normal-school instruction, has become so prominent that it deserves our marked attention.

I think it is not extravagant to say that a practice school is generally regarded as an indispensable adjunct to a normal school; and a trained teacher has come to mean one who has served a longer or shorter apprenticeship in the experimental school. A school that, for any reason, is not provided with this necessary adjunct feels itself in an attitude of apology. From all I have observed of the actual results of this kind of training, I do not share the popular appreciation of these experimental schools. In the main, the teachers thus educated, as I have observed their work, embody and display the very spirit of routine. What they do they do with mechanical exactness, and if their methods chance to be

bad, as sometimes happens, they are followed with fatal persistence. At the same time, there is often a marked absence of the scholarly spirit, and an indisposition to strive for higher attainments. The effect of technic on culture I have already attempted to illustrate, and so I need not restate this ground of objection to practice-work. I will only add that the conditions under which this alleged training takes place are so peculiar and unlike those under which real school work will be done that harm is quite likely to result from it. The criticism that follows this practice-teaching is quite likely to be either superficial and worthless, or hypercritical and pernicious. If this experimental work is done, it seems to me that it should be done subject to these conditions: the academic training should be well advanced, and the pupil should have gained a considerable mastery of educational doctrines, all to the end that he may preserve his freedom and interpret the lessons of daily experience. A school of observation seems to me indispensable. The normal school itself will illustrate the high-school grade, but some express provision should be made for representing the primary and grammar grades.

4. The strictly professional studies of a normal-school course are psychology and the history of education. All the reasons that enforce the study of physiology on physicians may enforce the study of psychology on professional teachers. In each case he is essentially an empiric who has not a competent knowledge of his respective science. A science, truly known, is an art *in posse;* on the occasion of experience it is converted into rules for practice. A liberal art—like medicine, law, or teaching—is best learned implicitly through its correlative science. Psychology can be taught in such a way as to have al-

most the concrete interest of geography. Studied in this manner, it is a culture subject of almost co-ordinate value with the three previously named. Under wise instruction, students in secondary schools can become psychologists in the same sense that they can become geologists; in both cases they can attain to an intellectual comprehension of these sciences. In the case of teachers, psychology has this marked advantage, that its general truths can readily be converted into practical rules on the occasion of experience. To the teacher of awakened intelligence it is an intensely practical subject. Psychology exhibits the abstract or scientific phase of teaching, while its concrete counterpart is exhibited, or should be exhibited, in the school of observation. The bringing of the really fruitful portions of psychology into greater prominence would be a desirable, though, I trust, not radical, change in the normal-school courses of study.*

Plato asserts ("Republic," 368) that historical anal-

* "There is, I freely grant, such a thing as teaching genius, which is independent of training. There are teachers also who, though destitute of this genius, are yet thoughtful men, in whose minds the routine methods of the normal schools are vivified into living principles; but in the vast majority of cases these technical methods of the school-workshop remain merely in the dead form of rules and maxims, and leave the teacher precisely where the apt mechanic now is. It is the insight into philosophical principles that gives a true and never-failing supply of intellectual energy to the teacher; it is the apprehension of ideas that ennobles and inspires him; it is contact with the history of past efforts to educate the race that gives to him breadth and humanity. *Without* the sustaining energy thus supplied, it seems to me that the teacher's vocation is dreary enough; *with* it there is a daily renewal of spiritual life for himself and his pupils."—Laurie, "The Training of Teachers," p. 305.

ysis is the counterpart of psychological analysis, and in this he is followed by Cousin ("History of Phil.," vol. i., lect. ii.). The thought is that the essential elements of human nature pass into the current of history, and are there embodied in a concrete form, magnified by many diameters; the page of history is the screen on which are delineated the intellectual and the moral ideas of the human soul. The thought that I wish to impress is that educational history is the counterpart and proof of educational psychology; and that these subjects are the essential constituents of a teacher's professional study. The nearest approach to a radical change that I feel assured in recommending is the giving of a large place to the study of the history of education.

By its historical and actual constitution the normal school, in its scheme of academic study, is necessarily a school of secondary instruction. In consequence of this fact, so far as it recruits the teaching service of the country, the upper limit of its field must fall somewhat within the high-school grade. I call attention to this fact to show that, as at present constituted, the normal schools are not fitted to dispense the professional education needed by head masters, principals, superintendents, or even first assistants in high schools. If studied preparation is to be made for these branches of the service, it must be made in the colleges and the universities of the country. And when this is done, as it assuredly will be, its most marked effect will be upon the normal school proper. Enthrone the normal idea in the high places of the academic world, and, by a process of downward diffusion, it will inspire the whole teaching service of the country.

The last thought I wish to express is that we ought never to have need of any radical change in the adminis-

tration of our educational affairs. If such changes are ever necessary it is because there has been some marked arrest of growth. The most that we can desire is continuity of growth, or gradual evolution — the almost insensible transformation of the old into the new. The highest office of the educator is, by wise retrospection and prevision, to minister to this upward transformation. Whoever preaches revolution is worthy of suspicion and discredit.

CHAPTER XVII.

THE INSTITUTE AND THE READING CIRCLE.

All schemes for the improvement of the teachers of the country must recognize the fact that only a very small percentage of them have had any preparatory training of the professional or technical type. Even at this day, when the normal idea has become so prevalent, the assumption is broadly current that general scholarship is the sole prerequisite to teaching. This assumption is supported by the legal requirements for gaining a license to teach; for almost the only requirement is decent proficiency in the elements of an education. In other words, the law does not furnish a motive sufficient to induce teachers to make an express preparation for the practice of their art.

Another circumstance that goes to swell the number of unprepared teachers is the obvious fact that teaching is for the most part an avocation. It is not a vocation, much less a profession. Numbers of young men and multitudes of young women resort to teaching for a brief season, with no intention of making it a serious business, and, therefore, with no motive to make a studied preparation for schoolroom duties.

The fact is, I repeat, we must assume that our public-school service is to be administered, in great part, by young men and women who have made no previous study of the teaching art; and one of the great educa-

tional problems of the day is how to promote the professional education of teachers who have entered the public-school service with but little or no preparatory training.

I think we may say at the outset that the function of the normal school is to take in hand the training of professional teachers; whereas, the distinctive function of the institute is to provide some training for non-professional teachers. Those who frequent our normal schools, as a rule, do so with the deliberate intent of making teaching a vocation for a shorter or a longer period; and, at the time when they actually enter upon their duties, they have already learned more or less of their art. The institute, on the other hand, assumes that very many who are actually teaching, or who propose to teach, have never received a normal-school training; and so its special function is to supplement the normal school—to do a little of the work that it should have done, but which it did not have the opportunity of doing.

Military life furnishes an illustration of the distinctive functions of the normal school and the institute. The professional soldier is educated at West Point; but the exigencies of the country sometimes require the services of large numbers of non-professional soldiers. These volunteers are usually trained for a few days before they see actual service. In camps of instruction they are taught the elements of military tactics, while their training is extended and perfected by active service in the field.

And so we may define an institute as a normal school with a very short course of study; and we may state its general purpose to be, first, to instruct the prospective, but non-professional, teacher in the elements of his art,

and thus to give some extension to his knowledge and skill. In this statement I have sought to indicate the primary and main purpose of the institute. I do not forget that a secondary purpose should be to stimulate and assist teachers who are further advanced in the theory and practice of their art.

Now, for the sake of clearness, let us inquire what knowledge is needed in order to enter upon the work of teaching with fair hopes of success; what are the elements of professional knowledge, properly so called; and what part of this work the limitations of the institute will permit it to undertake.

1. It is plain that the very first requisite is a competent knowledge of subjects. The teacher must know how to read, spell, and write, and must have some knowledge of arithmetic, grammar, and geography, as the necessary condition of assisting others in the attainment of this knowledge. It is necessary to insist on this requirement, for two reasons: (1) The doctrine is beginning to prevail that teacher and pupil should move on the same plane, both should be tyros and learners, and that the chief point of superiority on the part of the teacher is his greater mental alertness and persistence. Of course, absolutely speaking, the teacher should be a learner; but, relatively, he should be learned. In geography, for example, his scholarship should not be simply a thing in progress, but a fact accomplished. In the work of the school, teacher and pupil are not co-ordinate elements. And (2) in our day there is such insistence on method, as distinguished from scholarship, that we are in danger of underestimating the importance of high scholastic attainments. In the earlier day scholarship was everything, method almost nothing; and the natural recoil from this

error has induced an exaggerated belief in method as some substitute for scholarship. I think it cannot be too much insisted on that a school of a given grade should have for its teacher one who has been educated in a school of a higher grade.

After scholarship, the thing of next importance is method. Two teachers of equal attainments may stand to each other in real force as ten to one, the difference being due to high and low qualities of method. I use this term to cover all the processes of the schoolroom—organization, government, and instruction. Many have not observed the fact that improvement in methods of teaching has been as real, and, perhaps, as rapid, as improvement in the processes of agriculture or of manufacture. There is scarcely a greater difference between gathering grain with a cradle and with a reaper than between the alphabetic and the word method. There is not a single method in schoolroom practice that has not suffered marked revision and improvement within the last twenty-five years. Now, what the institute is to insist on is, that all teachers under training shall be taught the very best current method of doing the various work of the school.

So far we have been dealing with the matter and the method of the teacher's outfit; the body, so to speak, of his professional self. But this body must be animated and inspired by a spirit. I am now speaking of something that cannot be articulately described, but of something of which we are all conscious when we think of a real teacher and his work. Grant to the painter his palette, his brushes, his paints, and the formal rules of his art, but, with only these things, he is merely a mechanic. What will transform this mechanic into an artist? Fair

ideals, a divine sense of beauty, and a conception of the possibilities of art. It is only under the domination of this spirit that the artist becomes a creator. Now, what I wish to say is, that, by some means, a spirit akin to this must be infused into a body of scholars, in order that they may become teachers. There must be some ideal to serve as the goal of one's effort; some sense of the sacredness and grandeur of the teaching office, and a conception of what is possible through the resources of the teacher's art. This change of spirit and of purpose is so marked that, sometimes, in speaking of it, I have ventured to call it *conversion.*

On more than one occasion I have seen a change of countenance pass over an assembly of teachers as the speaker succeeded in causing his hearers to catch a glimpse of the real nature and the possibilities of the educating art. He who has once ascended a mountain, and from thence has surveyed the landscape below, is forever after a changed man. In some real way, but, of course, in a way that cannot be described, so far as spirit is concerned, there has been a transformation, almost a transfiguration. So teachers may be made to survey their work from the summit of a lofty conception; and then, forever after, this work will be done in a new spirit, under a kind of inspiration.

Matter, method, and spirit, these are the three things without which no work in teaching, even of tolerable excellence, can be done. They must accompany all true teaching; and while they form the minimum of one's professional preparation, they are the permanent endowments of the most accomplished teacher. Other elements may be added, but these are constants.

2. General knowledge must be regarded by the teacher

as instrumental or technical—it is necessary material that he must employ in the practice of his art; but with respect to general scholarship, the teacher cannot be distinguished from the well-educated man or woman in general; so that while a knowledge of subjects is to the teacher instrumental knowledge, it is not, with strict propriety, professional knowledge. Perhaps we must call it *quasi* professional; though, considering the practical necessities of the case, instruction in subjects must be regarded as a necessary function of the normal school. What is that knowledge, then, which differentiates the teacher from the scholar—which is, with strict propriety, professional knowledge? Method, as described in the last section, is certainly entitled to this designation, but on the ground that it is peculiar knowledge that no one but a teacher must necessarily have. On still higher ground, select portions of psychology are entitled to this designation, for it is chiefly this knowledge that can serve as the rational basis of method. As Mr. Bain says, the largest chapter in the science of education is psychological. Psychology, in fact, stands in the same relation to teaching that anatomy does to medicine. The teacher's art is addressed to mind, and if this art is to be rational, if it is to be administered in the scientific or the professional spirit, for these are usually identical, the teacher should know much of the philosophy of spirit. We must hold, I think, that there is as good a reason why a professional teacher should have an articulate knowledge of psychology as there is why a physician should have such a knowledge of physiology. That Professor H——, for example, should know the interdependence of sensation, perception, imagination, memory, and judgment, is just as essential as that Doctor Y—— should know the inter-

dependence of lungs, stomach, liver, and brain. There is much of psychology that is merely curious or of general interest, having but very remote and indirect bearings upon the practice of the teacher's art; but there is other matter, of much smaller volume, that is vitally and constantly related to every process of instruction. Some of this knowledge should certainly be communicated to teachers through the agency of the institute. I hear it said on all hands that the ordinary teacher is not capable of these high attainments; but whoever will rightly apportion this knowledge, and deftly present it, will discover a growing number of teachers addicted to serious thinking. All admit that teachers *ought* to possess knowledge of this sort, but many are so sceptical of success in trying to communicate it that they abandon the project as hopeless. But, as the sage of the *Tribune* was wont to say, "the only way to resume is to resume;" to create an appetite for this kind of knowledge we must in due season and in right measure allow toothsome morsels to fall in the way of those who have an awakened intellectual appetite.

Another kind of knowledge, even more distinctly professional, because falling much further out of the range and the needs of the ordinary student, is what Mr. Bain calls "education values." What is the practical value, say, of arithmetic? Is this value of the primary order, so that every one must study the subject; or is it of secondary value chiefly, so that the knowledge of a few can be sold and so made to suffice for the needs of the many? As a discipline, is it specific in its effect, *i. e.*, does it raise the quality of some special mode of mental action; or is it tonic, *i. e.*, does it minister to a general invigoration of the intellectual system? Such questions may be asked

of every study; and I hold that it is as reasonable that professional teachers should know these things as that physicians should know the therapeutical value of calomel and quinine. At least one distinction should be made clear to all who teach, that between the practical value of a subject, and its value for discipline or culture. The subordinate distinctions I have indicated are of very great value, but it is scarcely reasonable to expect that teachers unaccustomed to severe thinking shall understand them sufficiently well to make a sure and safe use of them. The general spirit of the truths I would impress in what has preceded may be expressed in brief, as follows:

Teachers should be assisted in the work of perfecting themselves for the duties of their office by being stimulated to self-activity along three main lines of study:

(1) Their knowledge of subjects should be gradually extended; arithmetic should lead up to algebra and geometry; geography to travels, history, and political economy; grammar to rhetoric and criticism; Latin to French and Italian, etc.

(2) There should be a steady advance in professional knowledge, strictly so-called. In addition to the algebra, the chemistry, and the French grammar, there should be on the teacher's study table a representative educational journal, and the best current books on the theory, the history, and the art of teaching.

(3) To counteract the narrowing tendencies of professional study and duties, it is necessary that the teacher should court the catholic influences of general literature; and, in addition to the books first suggested, his study table should be graced with a representative literary magazine like the Atlantic or Harper's, and with an oc-

casional volume of essays, poetry, or fiction. The aim I have in view is to make the teacher a reader and a thinker; to liberalize his mind with various knowledge; and to secure to him some measure of genuine culture. Taking the teaching class as a whole, I do not know what greater good can be done to it than to inspire it with a love of the scholarly vocation.

In what has now been said, I have tried to express my conception of the aid that should be rendered the great mass of those who are engaged in the public-school service. The greater number of these have received no preparatory training of the professional type; in many cases there is great deficiency in general scholarship; in only a few cases, comparatively, is there a confirmed taste for intellectual pursuits; and in still fewer cases is there any degree of that real, though indefinable, thing we call culture. This work, if done at all, or at least if done directly, surely, and methodically, must be done, in part, through the agency of the institute; and we must now study the limitations of this agency, the better to define its special aim and method.

3. The most obvious of these limitations is that of time. The course of instruction in a normal school covers a period of three or four years; but the institute must do its work within a period of one, two, three, or four weeks. The customary period is one week, or five working days. From this circumstance it becomes apparent at once that a choice must be made between extension and depth. If much is undertaken it must be done superficially; or if thoroughness is the rule, the attention must be limited to a few subjects. This limitation of time affects the method of the institute with like precision. If class-work be the rule, then the subjects

taught will be few and the progress in each will be slow. If instruction be given by lecture, the range of topics will be greater and progress apparently more rapid; but the intensive effect will be proportionately light. The whole question of method is reduced in general terms to this: Shall the instructor teach, or shall he lecture? That is, shall he *cause* his pupils to know, or shall he merely *permit* them to know? I do not propose to answer this question at this point. Indeed, it cannot be answered till other conditions have been taken into account.

Another limitation to which the institute is subject is the unequal proficiency of its membership. I am usually forced to distinguish three classes of attendants: The interested, well-informed, and appreciative few, who can interpret and appropriate the best that can be said; the attentive and willing, but comparatively uninstructed and incapable listener, who, at best, can appropriate only imperfectly, and, in consequence, is always on the verge of weariness and inattention; and, the ignorant and the indifferent, who hang like a dead weight on the spirit of the instructor. A skilful instructor might manage each of these three classes with success if it could be isolated; but to instruct them simultaneously, and with profit, is as difficult a task as can be imagined.

Now, recalling the limitation of time, it must be evident, I think, that the institute cannot undertake the instruction of teachers in subjects — it cannot give them the matter of instruction. A teacher who comes to the institute ignorant of geography cannot possibly learn enough of this subject within four weeks to satisfy the requirements of an examiner; and the attempt to repair

ignorance in three or four subjects within this period is a palpable absurdity. It must be assumed, I think, that the members of an institute already have the matter of instruction, and what they most need in this line is a revival of their knowledge. A rapid review of the salient points of a subject, or even of several subjects, is quite possible within the period of a week; but this requires the sharp and accurate blows of an accomplished workman. The faults I have most frequently observed in the teaching of subjects are these: An aimless talking about a whole subject, vague and pointless, instead of an incisive treatment of a few essential portions of the subject. In arithmetic, for example, instead of attempting to teach the whole subject of Fractions, it would be better to dwell on one or two essential matters, as the relation of numerator to denominator, or an analysis of the process of dividing one fraction by another. And in Percentage, if the teacher can be made to comprehend clearly the meaning of the term *per cent.*, the whole subject will become luminous. In this matter of selection, the term *typical knowledge* will express what I mean. Another error in institute instruction is to dwell by preference on what is merely curious, as the casting out of the 9's, the cause of the gulf stream, hair-splitting in grammatical analysis, minute subdivisions in elementary sounds, subtleties in pronunciation, and quibbles in general. An error of a more general nature, an error that is almost a vice, is the complaisant indulging in mere platitudes, in anecdotes, jests, and pleasantries, chiefly as a convenient means of consuming time and of making one's self popular. An anecdote that is a pat illustration is wholly legitimate; it enforces a point in the instruction, and it puts one's audi-

tory in good-humor—two excellent things. If we keep in mind the obvious fact that the purpose of the institute is to instruct rather than to please, but that we may please in order the better to instruct, we shall not be likely to fall into errors on this point.

To recapitulate: the utmost that an institute of a week, or even of two weeks, can undertake to do in subject-matter, is a rapid review of the typical or more important topics. In a session of four or six weeks, this review can be more extended and more minute.

Assuming, as I think we must, that those who attend the institute have a considerable mastery of subject-matter, and that the most that can be done in this line is review and revival, we find that the more distinctive and characteristic purpose should be to impress upon teachers the general nature of each subject, and the best methods of instructing and governing. In other words, the institute is true to its proper function in so far as it is instrumental in communicating professional knowledge, properly so-called. I will take a very simple case to illustrate what I mean: Why should a child be taught to read? In teaching primary reading, what is the problem the teacher has to solve? How is the new (printed) vocabulary related to the old (spoken)? What methods have been used to teach children this new vocabulary? Which method shall we select, and on what ground shall we base our choice? What knowledge does a child need in order to name new words for himself?

Systematic instruction in the line of these questions seems to me typical of the best work that an institute can do. In the best sense, it is professional work in one of its phases. It gives teachers a knowledge of the

agencies at their command, and so makes possible the facile and versatile use of these instruments. In giving instruction of this kind, I think the following order should be observed:

The purpose for which the subject is taught; its nature, as shown by a proximate analysis; and a rational method of presenting the subject. Instruction in geography, for the purposes of an institute, might then take this form:

(1) The purpose of geographical study is to produce in the pupil's mind a vivid conception of the earth as the dwelling-place of man.

(2) The unit of study is the earth, considered chiefly with reference to its surface; this unit is so vast, and the most of its surface so remote, that the greater part of the knowledge required must be gained at second hand, through books.

(3) In accordance with the general psychological law that the mind works downwards from the whole to the parts, and from the vague to the definite, the first presentation should be the artificial globe as the representative of the earth; and when the grand outline has been made somewhat articulate by subdivisions, the details should be supplied from the text, and thus a *definite* whole reconstructed out of the original vague whole.

Of course this is only suggestive. A different philosophy would involve a different method of procedure.

Another branch of professional knowledge, of capital importance to all who teach, is method as related to school organization and government. In fact, in the order of time, this knowledge is prior to that just discussed; for before a school can be taught, it must be or-

ganized, and when organized, it must be governed to save it from disintegration. While the final purpose of the school is instruction, it is nevertheless true that the real efficiency of the school is chiefly related to the mode and degree of its organization and discipline. Teachers should be taught to aspire to a high type of school organization and government, and the principles and rules of this art should be expounded with all possible clearness. In a thing so apparently simple as the making of a programme, there is involved a large amount of pedagogical knowledge. To do such a piece of work intelligently and well is a high accomplishment, of which only a comparatively few are capable. To organize and grade a public school, and to provide it with a suitable course of study, I believe to be one of the highest feats of pedagogic skill. At least the elements of these arts should be taught in the institute; and the work I have attempted to outline in this section should be ranked as one main part of the scheme of instruction. When it can be done under proper conditions, a most interesting and instructive item in the institute programme is the concrete illustration of method by means of an actual class exercise, as in reading, spelling, or number. Elementary exercises are the best for this purpose, as children are least likely to suffer from self-consciousness. It is unsafe, however, to improvise a class for this purpose. A skilful teacher with her own class can alone be reasonably sure of success.

What has been said thus far relates chiefly to subject-matter and to method; and the belief has been expressed that the limitation of time restricts the instruction given in the institute by preference to method. Assuming that teachers have some competence in the branches to

be taught, our efforts should be directed mainly to leading them to know how to instruct, how to organize, and how to govern.

At this point it is necessary to say a word with reference to what we may call the subjective element of professional knowledge; that part of psychology which bears on the presentation of knowledge and its elaboration into faculty, habit, opinion, common-sense. He must be a bold man who would dare defy public opinion, and attempt to bring any considerable amount of this instruction into an institute. But I venture to say that much of this grade of instruction ought to be given. In every institute there will be at least a few minds of the better order, that find delight in reflecting on the *rationale* of methods; and there are many more that might be easily provoked to this kind of thinking. For these reasons, it seems to me plain that, in every instance, something in this line of instruction should be done; just a little, probably, but still something. I see no good reason why the average teacher may not be interested in knowing the general mode of mental growth, and the parts that are played in this process by sensation, memory, imagination, and judgment. The office of language in the process of instruction is, certainly, not easy to explain or to comprehend; but I see no reason why at least the outlines of this subject might not be brought down to the understanding of the average thinker. One valid test of good teaching is the extent to which it induces in pupils the ability to think and the habit of thinking; and I see no reason why the instruction given in an institute should not be valued by the same standard.

In the progress of my discussion thus far, I have made incidental mention of several topics that are of prime im-

portance in the actual management of institutes. These topics will now be considered in moderate detail.

1. As between class instruction and instruction by lecture, which is preferable for institute use?

Where so much must be done in such a short space of time, the question of method is all-important. The broad distinction between lecturing and teaching must be kept in mind. In mere lecturing the pupil is permitted to know; he has an opportunity to learn; he may learn if he will. On the part of the pupil, the lecture presupposes a mind already alert, already bent on serious acquisition; or its purpose may be merely to awaken and stimulate a desire to know,—to implant a strong motive for acquisition. Class instruction, on the contrary, causes a pupil to know. Here the teacher comes into close relations with the pupil, and puts him under obligations to know. The actual difference is about the same as that between advising and commanding. As a general rule, the efficiency of instruction by lecture rises in proportion to the growing ability and interest of the learner; its efficiency is greatest where there is the greatest maturity of intellect and scholarship, and least where the degree of intellectual awakening is lowest.*

The chief circumstances that favor the adoption of the lecture method are the following: The need of awakening a strong interest in a subject; the need of teaching the outlines of a subject within a short space of time; and the need of teaching matter new in substance or in form, and therefore inaccessible by other means.

* On this general subject see Porter's "The American College and the American Public," p. 119.

If these distinctions are well-founded, I think it follows that, in a session of one week, the typical mode of institute instruction is by lecture, and this for the following reasons: Not much instruction can be given in subjects, but what is given must be select matter, and must be presented by a process of rapid outlining; the typical work of such an institute must be instruction in methods and principles, and matter of this sort is inaccessible save through oral communication; in all institute work, an object of first importance is the creation of professional enthusiasm and a strong desire for higher attainments. For these ends the lecture method is preeminently serviceable.

It is not necessary to assume that, in this process of instruction, the pupil is merely a passive recipient. He may be this, but he need not be. In general, lecturers do not require their hearers to reproduce the substance of what has been communicated, the retention and assimilation of the subject-matter being left to voluntary choice; but, in an institute, there is no good reason why there may not be a recitation of what has been presented in the lecture. As a means towards this end, I believe that systematic note-taking is essential. I know that independent note-taking is a high accomplishment, and that the ordinary attendants at an institute are incapable of it; but it is practicable for the lecturer to dictate the main points of the lesson, and to require the accurate transference of these to the note-books. These summaries will allow the pupil to recall the oral expositions, and will serve as the basis for the desired recitations. With these qualifications, I believe the lecture method is the one best suited to an institute of short duration.

In a session of two weeks considerable instruction in subjects may be given in a modified form of class-work. The preparation of assigned lessons will scarcely be practicable, but there may be more or less recitation work in the sense that pupils can be examined on set topics, and can be made to exhibit their proficiency by doing some actual work, as parsing, solving examples, and demonstrating principles. Where the institute can be broken up into sections of, say, twenty members each, instruction may be made individual to a considerable extent, instead of being given to the institute in bulk. Where instruction is given to the collective body, there is such a division of responsibility that inattention is always imminent. In a small number the fear of consequences keeps each mind on the alert.

The most satisfactory institute work I have seen done was in a session of two weeks, where the conductor had three assistants. The first hour in each session was devoted to a lecture on some professional subject by the conductor, given to the whole body of teachers. The institute was then broken up into three sections, and these passed in succession from one assistant to another, so that, besides the general lesson, each member, in every session, had been instructed in three topics, as arithmetic, grammar, and geography. It seems to me that this is very near the ideal mode of conducting a two weeks' institute, as it preserves the normal proportion between the two methods of instruction. I do not know that any essential modification would be needed for sessions of three or four weeks.

I have already referred to the fact that a serious limitation upon the work of an institute is the heterogeneous character of its membership as to interest, intent, and

ability; and every conductor must have debated the question, whether a grading of the institute is practicable. No one can doubt that substantial advantages would come from a sorting of teachers on the basis of ability, and from the opportunity thus given of making the instruction more individual; nor can any one doubt that such a classification is theoretically possible. The main difficulty lies in the cost of such an organization. In general, a multiplication of grades multiplies the teaching force, and hence the cost of instruction. With three grades the work is trebled, and, if the work of the present teaching force is not also to be trebled, there must be three times the number of instructors. This difficulty is greatly increased on the supposition that, at the second session of the institute, three grades of new-comers are to be added to the three already established. Taking into account all the difficulties in the case, it seems to me that a real grading of the institute is impracticable; and that, for the present at least, the skill of the conductor must be taxed to interest and instruct a heterogeneous membership.* The greatest difficulty to overcome is the indifference of teachers; and one of the best tests of the ability of an institute instructor is his success in arousing an early interest in the work in hand. In some cases county examiners supply a motive for attending the institute, but, so far as I know, there is not as yet a motive sufficient to make teachers take an active interest in the

* When the teaching force permits the dividing of the membership into three sections there may be a modified grading, as follows: form one section out of the young and inexperienced; another out of those who have taught for a limited time; and place the most competent in the third section. The instructors may thus adapt themselves somewhat to the needs of these three classes.

instruction that is offered. If, at the close of the session, the members could be examined on certain portions of the work done, and some tangible credit could be awarded for their proficiency, one of the greatest difficulties in institute management would be overcome.

I have now presented the main elements of the institute problem as it lies in my own mind, and my discussion of this question has been based on experience rather than upon any assumed theory of what ought to be or might be. It is very easy to describe the ideal institute, where everybody shall be pleased and instructed; but whoever knows from actual experience the real difficulties of this work will speak with great moderation and with many reservations. There is no feat in teaching so difficult as that of interesting and instructing the heterogeneous membership of an institute; and he who does not feel the need of revising his methods after each attempt at the practical solution of this problem has not yet learned its simplest elements.

All who are engaged in this variety of educational work have yet much to learn by study, by experience and conference; but it is fair to remember that many of the imperfections of this work are inherent in the material with which we have to do. These inherent difficulties will persist in spite of us; we must court fresh accessions of skill, to the end that we may overcome the obstacles that beset our progress; but if, after all our forethought and effort, the results are disappointing, we must do ourselves the justice to remember that we are not responsible for the limitations of time, for inequalities of membership, or for original ignorance and indifference.

The following recapitulation will close this part of the discussion:

1. The institute should be regarded as the chief agency now at our command for communicating some measure of professional knowledge and some degree of the professional spirit to the great mass of teachers who have had no preparatory training.

2. The institute should supplement, not supersede, the normal school. It should not claim to give even the elements of academic education, or to communicate in full the theory and the art of teaching; but should inspire its membership with a determination to gain the helps that are offered by larger courses of instruction, or, when this is impossible, to pursue a systematic course of self-instruction by reading and study.

3. The aim of the institute should be rather to communicate the best methods of organizing, governing, and instructing, than to teach subject-matter; and the instruction in subjects should be mainly in the line of review and revival.

4. When practicable, instruction should be made in some measure individual by an organization by sections, and in this class instruction pupils should be made to take some active part.

5. In short sessions, instruction by lecture and note-taking is preferable; but recitation should form a part of every exercise. In longer sessions class-work should be brought into greater prominence.

6. The best work of the institute should be regarded as the creation of the scholarly and the professional spirit, a desire to reach high scholastic attainments, and an ambition to attain to artistic excellence in teaching.

An incidental purpose served by the institute is too

important to be overlooked. I mean the wholesome effect which it may have on the communities in which it is held, in the way of a better educational sentiment among the people. In many cases a school of a high type is impossible by reason of the backwardness and inertia of public opinion. The people themselves must be educated up to a certain point before an enlightened and skilful teacher can do his best work. There are numberless instances in which a new era in the history of a school has dated from the time when a good institute excited an interest in better methods, and gave moral support to teachers struggling against the inertia of public opinion.

This tonic effect of the institute is produced in part through the lectures and class-exercises of the day sessions; but chiefly, I think, through the evening lectures delivered by persons who speak with some degree of authority. Such lectures, to be of real service, should bear on educational themes, and should be of a character to interest a popular audience. These lectures may fail of their purpose either by being too technical, or by bearing on themes exclusively literary, scientific, or historical.

Even when administered under the most favorable circumstances the institute cannot be counted on to produce on the teaching class what may be called a constitutional effect. A few minds of the better order may be affected permanently by it; by the temporary stimulus they may be enlisted in a systematic course of improvement; but it is to be feared that the greater number of those who attend the institute speedily return to their former state of indifference as to professional improvement. The popular lecture is by no means a substitute for the library or the school. It is invaluable as a stimulus to read-

ing and study, and if it does not lead to this result it is to be counted only as a pastime. So the institute is a stimulus which ought to be supplemented by some means of continuous self-improvement. Only a very small number of those who attend the institute can attend the normal school, the college, or the university; but all who will may pursue a systematic course of reading in the line of self-improvement. This supplementary agency is now in process of organization under the general name of the reading circle. The purpose of this new organization is to support earnest and intelligent teachers in their efforts towards self-improvement, and to stimulate the careless and unprogressive to a diligent use of their leisure moments. It is too early to describe the reading circle as an actual fact, but it is permissible to discuss the conditions which seem essential to its ultimate success.

1. Teachers need to be told in definite terms, by some authority considered competent, both the quality and the quantity of work that can reasonably be undertaken. Many teachers do not undertake the work of self-improvement because they do not know where to begin and how to proceed, and this degree of support is all the external aid they need.

2. The purpose of the reading circle may be very easily defeated by proposing to teachers too formidable a task. It must be recollected that the spare time of the average teacher is very limited, and that he has no confirmed intellectual habits that make study easy and agreeable.

3. As intellectual breadth and literary culture are among the most precious endowments of the teacher, it would evidently be unwise to make the course of reading

wholly, or even mainly, professional. If it were necessary to make an absolute choice between a course of reading in general literature and a course of technical instruction, I think preference should be given to the former. But it is not necessary to make such a choice, and so the study of methods and doctrines should be relieved and brightened by readings in literature and history.

4. What Mr. Bain has happily called* "intrinsic charm" cannot be relied on, in most cases, as a sufficient stimulus to sustained effort. For the most part, this is an emotion which follows as the result of less worthy modes of stimulation. In the beginning, the staple motives must be the hope of some tangible reward and the fear of some impending loss. The reward hoped for and labored for may very properly be a credit on the examiner's book for work done in the reading circle; and the propulsive motive may be a reasonable fear that unwillingness to work for self-improvement may be construed as a disqualification for the teaching service.

5. It is plain that the authorized examiners should be officially associated with the administration of the reading circle, since they alone can bring the two motives noted above to bear on the teachers within their jurisdiction. It may safely be predicted that the reading circle will prosper where examiners are thoroughly interested in the progress of their schools; but that it will languish where these officials are indifferent to the quality of the teaching service within their jurisdiction.

6. To make credits for the work done a reliable and tangible factor in determining a teacher's right to a license, some systematic and equitable mode of examina-

* "Education as a Science," p. 28.

tion must be devised. All examinations for a license might very properly be made to bear on important portions of the reading-circle course; and if this were done, the two motives already mentioned would at once be brought into efficient play.

APPENDIX.

THE STUDY OF EDUCATION IN THE UNIVERSITY OF MICHIGAN.

Requests for information, that are addressed to me from time to time, induce me to make a somewhat detailed statement of the work attempted to be done in the University of Michigan in the study of education. As this kind of university work is essentially new to this country, whatever may have been done or attempted in it, in any one institution, becomes, to a certain extent, a matter of public interest. So far as I am concerned, my work, both in plan and execution, has been tentative. Indeed, in all new ventures, where precedent and tradition fail, the most carefully devised plans must be held subject to correction and revision by experience. The men who are engaged in this new variety of university work doubtless owe it to the public to contribute to the body of recorded experience, to the end that each new attempt may be made from some established vantage-ground.

The movement that resulted in the establishment of the chair of the Science and the Art of Teaching in the University of Michigan had been contemplated for several years by President Angell, and public attention had been explicitly called to the need of such instruction in several of his annual reports. The introduction of such a subject into the university curriculum was held to be justified by a state of facts of long standing. From the earlier days of the University, the higher and more responsible places in the public-school service of the state had been held by men who had received their training in this institution; and

with the progress of the University and with the growing importance of its relations to the high schools, this means of recruiting the higher teaching service of the state has become an historical fact of no little significance. The report of the Superintendent of Public Instruction for 1883 shows that there were at that time twenty-seven public schools, each employing fifteen or more teachers. Of these *twenty-seven* schools, *sixteen* had superintendents who were educated in the University, *six* were in charge of men who were educated in schools outside of the state, and five were supervised by graduates of the State Normal School. This statement is sufficiently significant, but it does not exhibit the full extent to which the University has become the source from which the higher teaching force of the state is recruited. For example, in the Detroit high school there are seven assistants who were educated in the University, and this case is typical of the state of affairs in other first-class high schools. Under this condition of educational affairs the logic of the case is very simple and very conclusive. "The function of the university," says Mr. Fitch, "is to teach, and to supply the world with its teachers." In fact, the University of Michigan had for years been performing this function, but in an informal, unintentional way. Why not give the undergraduate who purposes to teach the opportunity to learn, at least, the theory of his art, in a more or less articulate manner, as a preparation for the public-school service? Why not teach in the University the cardinal doctrines of education, so that the entire public-school system of the state may be affected through a process of downward diffusion? Graduates of the University are called to supervise the more important public schools of the state. Why should they not have the opportunity to learn the theory of school supervision?

From another point of view the importance of making education a university study is, if possible, still more apparent. When we consider that education is one of the most comprehensive of subjects, that the theme has been enriched by the reflections of the wisest and best of all times, and that to be a

teacher or an educator in some degree is the common vocation of all, it is plain that the study of education has a pre-eminent claim on the attention of the general student, both on account of its value for guidance and as a means of liberal training. To the student who purposes to teach, this subject has a high professional value, and to the student in pursuit of a liberal education it is of, at least, co-ordinate importance with many subjects that are thought requisite for the attainment of a degree.

Such considerations as those now recited appeared valid to the Regents, and by a unanimous vote they established a professorship of the Science and the Art of Teaching, and, at the opening of the academic year 1879–80, I undertook the duties of this new chair—new not only to this University, but, in its scope and purpose, new to the universities of this country. There had been a precedent of long standing in Germany, that "native land of pedagogy," as a French author says, and in Scotch universities, those of Edinburgh and Glasgow.* In this country there was the chair of Mental and Moral Philosophy and Didactics in the University of Iowa, and a normal department in the University of Missouri. Since 1879–80 such chairs have been established in Johns Hopkins University, in Cornell University, in the universities of Wisconsin and Kansas, and in De Pauw University.

In organizing the courses of instruction the general aim was to offer opportunities for the study of education in its three main phases, the practical, the scientific, and the historical. It was seen from the start that one difficulty in the way was the feeling that the subject was an uninteresting and a narrow one —uninteresting, because it was hackneyed, every one thinking that he had more or less competence in it; and narrow, because it was assumed to be confined to the routine of the schoolroom.

* The history of this new educational movement in Scotland may be read in the very valuable and interesting essay by David Ross, "Education as a University Subject," Glasgow, 1883.

It was felt that it would be unwise, on the start, to dwell on the scientific aspects of the educational problem, because of the feeling that teaching was only an art, almost a handicraft, without a basis in the philosophy of spirit. Even in university circles, where teaching should be a fine art, drawing its highest inspiration from the science of knowledge and the science of mind, there is often a shallow scepticism as to the possibility and even the desirability of making education a rational art. It was plain to me and my advisers that the art phase of the subject should be presented first; but with such constant reference to principles and doctrines that a taste might be gradually formed for the more fruitful aspects of the study—the scientific and the historical.

It was never the intent to duplicate, in any respect, the work of the State Normal School; for, from the first, its field of operations had been predetermined by the limits of its academic course of study. It is a school of secondary instruction, and so the scholarship of its graduates is simply on a par with the scholarship that is attained in high schools of the first class. If there is any well-established principle in school economy it is this: the scholarship of the teacher should be considerably broader than the scholarship of his most advanced pupils. This law at once determines, on *à priori* grounds, that status of normal schools with respect to the supply of teachers, and the historical confirmation of this law is seen in the facts above recited, from which it appears that, after a prosperous career of more than thirty years, there were but five schools in the state employing fifteen or more teachers that were under the supervision of graduates from the State Normal School, while sixteen such schools were supervised by men who had their training in this University. It is thus seen that the upper limit of what we may call the normal field, and the lower limit of the university field, fall somewhat within the high-school grade of the public-school system. In providing for the professional study of education in the University, there was never a thought of making

the slightest encroachment on the actual and historical territory of the Normal School; and during the last seven years there has been no evidence that the line defining the two fields has been sensibly disturbed. The simple outcome of the new movement in the University has been this: the greater number of the men and women who enter the public-school service from the University have made some degree of special preparation for their duties; if the professional instruction they have received had not been given here, it would not have been gained at all. By just so much there has been a net gain to the state.

If the establishment of a course in the study of education in the universities shall lead to a clear definition of the province of the normal school, great good will accrue to the public-school service. It is scarcely to be doubted that in time past this school has attempted to do what, in the very nature of its organization, it cannot do, and by so much has neglected to do what it might and should do. The impossible thing it has presumed to undertake is to educate teachers for the highest places in the public-school service, for positions where the first need is a liberal education and a comprehensive knowledge of the educational problem; and the possible and proper thing it has left in some neglect is the education of teachers for the rural schools and for the subordinate places in graded schools.

In the education of teachers, then, the university and the normal school have independent spheres of activity; or, if there is any common ground, it is a narrow tract within the high-school grade that has always been common ground and is doubtless destined always to remain so. So long as both schools remain true to their constitutional functions, there can be no valid basis for competition or rivalry. In their academic work the respective graduates of these institutions are separated by four years of scholarship. In what intelligible and respectable sense can a university be said to compete with a secondary school, or a secondary school with a university? An apology might be de-

manded for dwelling on such truisms, had not some recent events shown that broad distinctions sometimes escape notice.

It was not expected that opportunities could be afforded for experimental or practice work by the students who might elect the courses in Teaching. It was not even desired. When I permit myself to do my own thinking, I feel forced to regard the popular appreciation of practice-schools as an illusion; though, when I reflect on the fact of this general appreciation, I conclude, for the moment, that I must be in error. Considering the particular educational problem I have been set to solve, I could not well have a practice school if I would; and from all the light that comes to me from observation and reflection I would not have such an adjunct to my work if I could. My main reasons for this conclusion have been given in a previous chapter,* and need not be restated here. This popular illusion, as I have ventured to call it, has been begotten of false analogies. Of the two great categories of employments, the manual and the mental, teaching falls clearly within the second; and the art of teaching is distinguished from most employments of its class by the circumstance that in it there is a maximum of the mental and a minimum of the manual. In the learning of every art, knowing precedes doing; and in a mere manual art, the major part of the learning process must consist in making experiments on brute matter that will not resent clumsy manipulation; but in an art like teaching the major part of the learning process is mental, and almost the whole preparation consists in forming clear conceptions of the processes that constitute the art. The forming of these conceptions I hold to be the almost exclusive aim of the strictly professional part of normal instruction, and for this purpose there is no need of a school of children on whom experiments are to be wrought by apprentice teachers.

Another preliminary must be added; there is no "normal department" in the University of Michigan, but instruction in

* "The Normal-School Problem," Chapter XVI.

teaching is administered just as all other instruction is, save that it is all elective, none being necessary for graduation, but all counting towards the attainment of a degree. In fact, it is only through the elective system that it seems possible to restore to universities their historic function of supplying the world with its teachers.*

The unorganized state of educational science should be noted as a serious obstacle in the way of those who are charged with this kind of university work. The professor of geology would think his task a very serious and difficult one if his science were still a *rudis indigestaque moles*, if he were obliged to draw his materials in fragments from miscellaneous books and periodical literature, and then tentatively to formulate his knowledge *pari passu* with his teaching. This is a faint illustration of the actual state of educational science and of the actual difficulties in the way of those who are attempting to expound it. For a long time to come the greater labor of those who are giving university instruction in education will consist in the work of collating and formulating. That there is a science of education *in posse* no thinker doubts, and that there is abundant material ready to be organized by the educational thinker is quite as apparent; but that there is such a compact body of educational doctrine already formulated, as easy and pleasant teaching requires, no one will assert.

With this statement of the general conditions under which my work was undertaken, I turn to give an account of the courses of instruction that have been offered, and of results in the way of attendance.

For the years 1879–80 and 1880–81 two courses were offered, as follows:

FIRST SEMESTER.

1. *Practical.* Embracing school supervision, grading, courses of study, examinations, the art of instructing and governing, school architecture, school hygiene, school law, etc.

* See "Education as a University Study," Chapter XV.

SECOND SEMESTER.

2. *Historical, Philosophical, and Critical.* Embracing history of education, the comparison and criticism of the systems in different countries, the outlines of educational science, the science of teaching, and a critical discussion of theories and methods.

In each of these courses there were two exercises per week during the year 1879–80, and four exercises per week during the year 1880–81. The basis of work in Course 1 was my "Chapters on School Supervision," the text being supplemented by lectures introducing the additional topics. As I had anticipated, I found that I had two quite distinct classes of students, some who proposed to become superintendents and principals of schools, and others who were chiefly interested in class work. At the end of the second year the instruction in general school management was set off by itself, constituting Course 3, with the text just named. After this division, Course 1 was devoted to instruction in ordinary schoolroom work, on the basis of Fitch's "Lectures on Teaching." The number of students electing Course 1 in 1879–80 was thirty-two, and the first trial of the "new departure" was fairly successful.

Course 2, as described above, was given for the first time by lecture, but owing to my unfamiliarity with this mode of instruction, to the unorganized state of the science I attempted to teach, and somewhat to the assumed unreality and inutility of the science of education, the result was unsatisfactory to myself, and, I doubt not, to my pupils. In giving the course the second time I sought to avoid these difficulties by using Bain's "Education as a Science" as the basis of my instruction. I found a great gain in using a printed text, and even more in finding a sanction for my theme in the name of such an eminent writer. There was a drawback, however, in the extreme abstruseness of the treatment and in the limitation on the number and kind of topics I wished to present. This text was used for two years,

but in the fourth year it was superseded by my "Outlines of Educational Doctrine," which I had written for this purpose.

With a view to giving a fuller opportunity for discussing some of the larger questions in the science of education, Course 4 was organized in 1880–81. In this course for 1883–84, the time was devoted to a critical study of Spencer's "Education;" a study of Rousseau's "Émile" was made in the course for 1884–85; and a study of Laurie's "Life of Comenius" is now in progress. A little time was given to the history of education in connection with Course 2 in 1880–81, by means of a reprint that I had caused to be made of the article "Education" in the ninth edition of the "Encyclopædia Britannica." In 1882–83, Course 5 was organized for the study of the history of education, and for three years instruction was given by lecture. Up to the present time, Courses 3, 4, and 5 have required but two hours per week of recitation work, but for the future they will be three-hour courses. For the year 1885–86 a new course, 6, was offered, on the comparative study of educational systems, and Course 5 was continued for the second semester. The scheme of instruction, then, as now organized, stands as follows:

1. Practical. The art of teaching and governing; methods of instruction and general schoolroom practice; school hygiene; school law. Recitations and lectures. Text-book: Fitch's "Lectures on Teaching." *Four-fifths Course.*

2. Theoretical and Critical. Recitations and lectures. Text-book: "Outlines of Educational Doctrine." *Four-fifths Course.*

3. School Supervision. Embracing general school management; the art of grading and arranging courses of study; the conduct of institutes, etc. Recitations and lectures. Text-book: "Chapters on School Supervision." *Three-fifths Course.*

4. Seminary. For the study and discussion of special topics in the history and philosophy of education. *Three-fifths Course.*

5. The History of Education. (First Semester: Ancient

and Middle Age.) Text-book: "Compayré's "History of Pedagogy." *Three-fifths Course.*

6. The Comparative Study of Educational Systems. Lectures. *Two-fifths Course.*

7. The History of Education. (Second Semester: Modern.) Text-book: Compayré's "History of Pedagogy." *Three-fifths Course.*

A prescribed course of reading is pursued in connection with Courses 1 and 2. Either Course 1 or Course 2 is requisite to obtain a Teacher's Diploma.

The extent to which these courses of study have been attended may be seen from the following tabular statement:

Years	'79–80.	'80–81.	'81–82.	'82–83.	'83–84.	'84–85.	'85–86.
No. of Courses offered	2	2	4	5	5	5	7
Students in Practical Courses	32	41	50	48	44	40	74
Students in Theoretical Courses	65	52	21	61	59	59	70
Students in Historical Course	—	—	—	4	9	15	36
Totals	97	93	71	113	112	114	180
Totals, less Duplicates	72	71	51	71	78	81	117

As yet, no required sequence in the courses has been established. In the case of students of the university grade, I do not think it material whether Course 1 or Course 2 have precedence, provided both are finally taken; but it seems to me altogether best that Course 2 should precede Course 5, for I cannot see how the facts of experience can be interpreted without some knowledge of fundamental doctrines.

As a general rule this work is elected by students in the later part of their course, and many who take up the study of educational doctrines have previously had a training in logic and psychology. Of the two hundred students who received degrees in the literary department during the years 1883 and 1884, eighty-three had taken one or more of the courses above described.

For several years the University has granted, to students who

proposed to teach, a special certificate known as the "Teacher's Diploma," on the following conditions:

The Teacher's Diploma will be given to resident graduates and to the students of the University at the time of receiving a bachelor's or a master's degree, provided the candidate has completed one of the courses of study offered by the Professor of the Science and the Art of Teaching, and also, at least one of the Teachers' Courses offered by other professors, and by special examination has shown such marked proficiency in the course chosen as qualifies him to give instruction.

The "Teachers' Courses," above referred to, are courses offered by professors for the express purpose of teaching students how their special subjects are best taught. During the year 1884–85 such Teachers' Courses were given in Greek, Latin, French, and Physics.

For some years it has been felt that the Teacher's Diploma granted by the University on such hard conditions should, on the score of simple equity, be made the legal equivalent of the Normal-School Diploma; and a bill to this effect was presented to the legislature of 1884–85. The following statements exhibit the grounds on which this legislation was asked for:

1. The Normal-School Diploma is given to students who complete a course of study sufficient to admit them to the University; who have received a stated amount of professional instruction in the theory and art of teaching; and have done certain practice work in the experimental school. This diploma entitles the holder to a life license to teach.

2. The Teacher's Diploma from the University is given only to students who have taken a bachelor's degree, *i. e.*, have added four years of scholarship to that which is required of a normal-school graduate; who have pursued at least one of the Teachers' Courses offered by the University in which pupils do practice work; and have completed one or more courses of professional instruction in the theory and art of teaching. At the present time this diploma has no legal value whatever.

3. As between the holder of a Normal-School Diploma and the holder of a Teacher's Diploma from the University, with respect to fitness for teaching, the case stands thus: The amount of professional instruction in the theory and art of teaching is essentially the same in both cases; the teacher from the University has four years more of scholarship than the teacher from the Normal School, but lacks a part of the practice work in the experimental school. The professional instruction being the same in both cases, are not four years of scholarship a fair equivalent for a few weeks' practice work? Should not both teachers stand on an equal footing before the law?

4. By the offer of a life license to teach, the state aims to draw into the public-school service young men and women who have completed a course of secondary instruction. Should not at least the same inducement be held out to young men and women who have completed a university course of study?

Through opposition coming from the Normal School this bill was defeated.

The main points involved in the theme of this discussion may be summarized as follows:

1. An historical function of the university is to educate teachers; and the higher places in the teaching service must be recruited from this source.

2. For the purposes of the general student the study of education is of at least co-ordinate value with many subjects that have long had a place in the university curriculum.

3. Teaching being almost purely a mental art, the technical part of a teacher's education should consist of definite conceptions of the ends to be reached, of the means most fit to be employed, and of the principles involved in the use of these means.

4. A comprehensive knowledge of education requires that it should be studied in its three main phases, the practical, the theoretical, and the historical. The phases that are the most proper for university study are the theoretical and the historical.

5. An important function of professorships of education in universities is the investigation and formulation of principles and doctrines, to the end that a science of education may be finally constructed.

6. The other principal function of such professorships is the dissemination of cardinal educational doctrines. The necessary course of this dissemination is by a process of downward diffusion from the university to the secondary schools, and from these to the elementary schools.*

7. In the form of a life license to teach, the state offers a reward to young men and women to complete a course of secondary instruction; much more ought the state to offer such a reward to men and women to complete a university course of training as a preparation to the public-school service.

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* "Le progres se propage de haut en bas, et cela jusqu'aux derniers limites, *car la science ne remonte jamais.*"—Boussingault.

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